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EMERGING COMMODITY EXCHANGES: FROM POTENTIAL TO SUCCESS

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INTRODUCTION

1. The liberalization of trade and reduction of government support to the agricultural sector have created fertile ground for the establishment of new commodity exchanges, and the further development of existing ones. Commodity exchanges, in the most restricted sense of the term, are defined as centres where futures trade is organized; this is how the term is normally understood in developed countries. But in this report, "commodity exchanges" include any organized market-place where trade transactions are centralized. This does not necessarily imply that physical commodities are brought to this central place: what matters is that the transactions are channelled through one mechanism, allowing effective competition among buyers and among sellers (this definition would include auction-type exchanges, but not wholesale markets, where trade is localized, but effectively takes place through many non-related individual transactions between different permutations of buyers and sellers).[1]

2. Commodity exchanges can therefore concentrate on the trade in futures and options contracts, as do virtually all the exchanges in Western countries; or they could function primarily as centres for facilitating physical trade. In both cases, they draw their main strength from their capacity to act as a focal point for trade transactions, and to increase the security of those transactions. Nevertheless, although new needs may have been created for such commodity trade mechanisms, organizing an exchange in such a manner that these needs are translated into effective demand is particularly difficult: over the past century, many exchanges have gone out of business, even some which were successful for some time.

3. This paper attempts to describe the key elements that determine the likelihood of success for a commodity exchange initiative. It starts with a discussion of the possible strategic choices for an exchange: what type of exchange and which types of contracts would work best under certain specific conditions, and on what type of users exchanges could focus. Then, the ways of organizing exchanges are discussed: their ownership structure, clearing operations, financial planning, and so forth. Regulation, in terms both of the framework that needs to be provided by the government and of the regulatory services that the exchange itself should provide, is the next topic. Finally, some of the practical elements of exchange and contract development are discussed, from the physical layout of the exchange to the formulation of contract delivery specifications and the timing of the contract launch.

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[1] It should be noted that in a few countries, "commodity exchanges" is used in an even wider sense to include not only places where trade takes place, but also regional centres where all commodity transactions that have taken place in the region are registered.

Chapter I

STRATEGIC CHOICES

A. Why is an exchange needed?

4. Commodity exchanges are not, or at least should not be, status symbols. They are organizational entities which allow those active in the production, trade, processing and consumption of physical commodities to reduce transaction costs. They provide discipline and act as a source of market information, and give those active in the commodity sector both the tools and the incentives to improve the way they operate. In this role, they can contribute substantially to the economic development of a country and the well-being of its population. In many cases, commodity exchanges are also the best means of filling the void left by the withdrawal of governments from commodity marketing and pricing, and as such, can do much to alleviate the pain of adjustment to a (more) liberalized market economy.

5. This main rationale- reducing transaction costs- is the key element for understanding commodity exchanges and for identifying the kind of exchange that would be most suited to the particular conditions of a country or a commodity sector. In some cases, the major potential for reducing transaction costs may lie in organizing a physical market-place, where buyers and sellers can be sure of finding a ready market. For example, one of the factors that led to the creation of the Chicago Board of Trade, which is over a century old and still one of the world's largest commodity exchanges, was that farmers going to Chicago at times found no buyers, and had to dump their unsold cereals in Lake Michigan, adjoining the city. In other cases, high transaction costs may be the result of a disorganized market, without standard definitions for commodities and without standard contracts. In yet other cases, the problem may be one of access to finance, or the high costs of protecting against price risks. Commodity exchanges are not rigid mechanisms, only able to provide a means of, say, managing price risks: in many cases, if properly organized, they can offer the best possible way of reducing a whole array of other problems, including problems with finding buyers or sellers, quality problems, difficulties in obtaining credit, and counterparty risks.

6. A commodity exchange can play many different roles, and which roles it needs to play will depend on specific conditions; indeed, an exchange that does not meet the specific needs of its market has little or no chance of survival. This underlines the fact that copying existing models, however successful they may be, is not a recipe for success. Much can be learnt from the existing exchanges- from their history, their successes and their failures- but they do not provide a blueprint for new exchange initiatives.

7. Furthermore, it should be stressed that in some cases, the creation of a commodity exchange may not be the best way of reducing transaction costs. To set up an exchange and the capacity to use it also has its costs, and in a small country, or a country where trade flows are very dispersed in terms of points of origin, transit and destination, these costs may exceed the benefits deriving from reduced transaction costs. If a foreign commodity exchange trading relevant contracts already exists, it is often more beneficial to facilitate access to that exchange than to copy its contracts in a domestic exchange ("copycat" contracts have a remarkably high

failure rate). Even if from a macroeconomic point of view an exchange is beneficial, its organizers/financiers may not be able to internalize a sufficiently large part of the benefits to make it a viable venture. Another case in which an exchange may not be viable is that of countries where physical trade is already well organized, and the banking sector is fully involved in commodity finance. The added value which then could be provided by an exchange lies in its potential as a forum for price risk transfer, a potential that can only be realized if many, often strict, conditions are met (with the added difficulty that there are other, possibly cheaper ways of transfering price risks).

8. In many cases (but not always), commodity exchanges can make a valuable contribution to national development goals by providing a mechanism which:

- reduces the costs of identifying a market outlet or source;
- drastically improves the amount and quality of information available to all those active in the relevant commodity sector, including price information;
- improves the reliability of quality standards;
- allows more security in trade transactions;
- facilitates access to cheap commodity finance; and/or
- allows easier price risk transfer.

9. However, when setting up an exchange and formulating the activities which it will undertake, it is important to identify which of the above functions need to be fulfilled, in accordance with the particular conditions of the relevant commodity sector. As a general rule, one first needs a proper physical trading environment before mechanisms for price risk transfer can be considered; and before an exchange can set out to improve access to finance, it needs to ensure that grading standards are reasonably well developed (but the system does not need to be perfect or all-encompassing: the existence of a commodity exchange will provide incentives for market players to improve the grading system and their use of it). It is thus of no use, for example, to try to provide a forum for risk transfer if quality standards are unreliable. The next section will discuss the interrelationship between the concrete situation and problems of a country's commodity sector, and the type of activities which an exchange can undertake.

B. Exchange activities: an array of choices

10. Exchanges can trade contracts for immediate (spot) delivery, or contracts for future delivery. They can just trade commodities as they are made available, trading on the basis of sample, or they can attempt to standardize transactions (e.g. by introducing trade on description). They are not limited to trading the commodities themselves; they can also trade titles of ownership or control over commodities (warehouse receipts). In Latin American countries,

where warehouse receipts are split into an ownership title and a credit document (a "warrant"[2]), exchanges could also organize trade in these credit titles, as a direct way of reducing the financing costs of the agricultural sector.

11. If physical trade in a country is not very efficient (often the case after trade liberalization), there is a good case for an exchange to trade spot commodities. The exchange can create a "safe island" in an otherwise insecure environment. But to attract maximum participation, it needs to have a deliberate policy of "filling the gaps" in the local trading conditions. One possibility is the installation of a good grading system, which allows for trade on the basis of quality descriptions, and thus frees buyers from the need to physically see and test each sample (see box 1). As well as installing the capacity to do this itself, the exchange can encourage warehousing companies to install the necessary grading systems and issue warehouse receipts using the relevant grading criteria. Exchanges can help to standardize the way in which trade takes place, for instance by developing standard contracts. They can promote mechanisms which make it easier to check the counterparty risks of market participants (e.g. stimulate the creation of a national, say, grain traders' association, which vets potential new applicants: outsiders thus know that all those who are members of this association meet at least certain requirements). They can also install arbitration mechanisms, which provide

Box 1

FROM SAMPLES TO PAPER

Much commodity trade nowadays, including in most of the exchanges which trade spot commodities, is on the basis of samples. A sample is circulated among potential buyers, who look at it, smell it and feel it, and on this basis decide whether to buy, and if so, at what price. For an efficient spot trade to develop, the capacity to trade on the basis of specification, rather than sample needs to be created: paper, rather than physical commodities, should change hands. This means that buyers will need to be persuaded to accept what is written on a grading certificate, rather than rely on their own nose and eyes.

For this to be possible, there need to be well-defined, reliable quality certificates, trusted by market participants (this is further discussed in box 7). To develop such trust needs time, even if objectively, the commodities are graded in the best way possible. The exchange can stimulate the process of thinking of products in terms of their standard grades in different ways. It could pre-sort the commodities into main grades before they are auctioned off, and have defined sessions for the sale of each grade of a commodity. It could publish prices by grade on an exchange display panel and through other media, if possible on a continuous basis. It could conduct research into the price differentials between grades, and make the results widely available; daily differentials could be compared with historical ones, so that market participants could see on any given day whether a certain grade is "cheap" or "expensive". The exchange could stimulate large traders to "exchange" different grades for certain fixed, or at least known, differentials.

The exchange may start by accepting only its own grading certificates, but it could expand the scope of its activities by beginning to accept grading certificates issued (as part of or attached to a warehouse receipt) by warehouses or other exchanges; paper trade would then go, in an organic manner, from being localized to being national or even regional. The problem of the legality or otherwise of warehouse receipts sent by fax could be resolved by exchanges only acting as the collection point for bids and offers, with final confirmation taking place between the originator of the document and the buyer.

[2] Also called "bonos de prenda" or, in the case of grains, "talón". The ownership title is called "certificado de depósito".

an independent forum for conflict resolution for transactions that have passed through the exchange. The transactions taking place on the exchange will provide a valuable barometer for supply and demand conditions, and, assuming that the exchange makes an effort to distribute the information, the prices that result will be of use to everyone involved in the commodity sector, from farmers to end-users. Exchanges can also attract buyers and sellers by providing a full range of business services at or near their premises: there should at least be the office of a bank, and for many exchanges it would be useful if shops selling key agricultural inputs were nearby. Government offices providing services to farmers could also be encouraged to set up a representative unit.

12. All these are natural development steps for new exchanges which start as a forum for organizing physical trade; and it can take a few years to make all this progress. But except for very specific commodities for which on-the-spot visual testing is a requirement of the trade (e.g. tea, tobacco or some high-quality coffees, standard descriptions of which, in the opinion of buyers, fail to provide a fair impression of individual characteristics), or which have to move through the marketing chain very fast (e.g. flowers or fresh fruits and vegetables), exchanges cannot afford to continue trading just spot commodities. They will have to develop more sophisticated mechanisms to continue meeting the needs of the physical sector.

13. While an exchange could start off by testing all the commodities brought into its premises itself, it could soon develop this into trade in warehouse receipts representing title to commodities stored elsewhere. For example, in a first phase, an exchange could trade on the basis of physical samples to which an exchange grading certificate is attached. When sufficient trust in this system is developed, trade could be just on the basis of the grading certificates. The exchange could then make the prices for which different grades are traded publicly available; it would be useful to appoint a telephone clerk responsible for responding to public inquiries, and consideration could be given to putting this type of price information on an electronic network. Then, outside bids, from people outside the exchange, could be solicited; if there are different exchanges in the country (or economic region), outside bids could be accepted from all traders accredited to these exchanges. Another way to expand the number of people able to use the exchange is to stimulate the emergence of brokers, who accept client orders. Simultaneously, the exchange could accredit non-exchange warehouses to deliver grading certificates, which, together with the relevant warehouse receipts, could then be traded on the exchange; in other words, the exchange would become national or, in the case of larger economic areas, regional or international. It is clear that this development path is interesting not only for exchange users, but also for the exchange itself - the potential growth of trade volume is large. At the same time, the conditions for success are much less stringent than in the case of the more complicated futures contracts.[3]

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[3] The basic reason for this is that trade in warehouse receipts represents trade in commodities that already exist: warehouse receipts come into being once commodities have been deposited at a recognized warehouse, and so every sale of a warehouse receipt is backed by the actual presence of the commodities (with safeguards built in against the risk that they are no longer in the warehouse). This can be contrasted with a futures market, where everyone, whether they own the commodities or not, is free to sell contracts. Trade in warehouse receipts is a flexible form of physical trade, and if the exchange provides a forum for it, it will be used as long as its transaction costs are lower than the transaction costs of other mechanisms which can be used in physical trade.

14. The transition from a localized exchange to a national exchange necessarily passes through trade in warehouse receipts. The latter are very useful for a variety of actors. Farmers can store their product after harvest, instead of selling it immediately, and use the warehouse receipt to obtain a credit. Processors can use working stocks as collateral, ensuring that the need to store physical commodities is no longer a financial burden for them. The reduced costs of storage and the low costs against which farmers and others can borrow against goods in store will reduce seasonal price differentials, to the advantage of consumers. If these receipts are also traded on an exchange, there are many additional advantages. For example:

- Assuming that warehouse receipts indicate a specific grade of the commodities stored, the exchange will be able to collect and distribute information on the prices that are quoted for each grade and delivery centre. This greater transparency leads to a whole range of new possibilities for farmers, traders and processors. For example, they could give "open" orders to intermediaries active on the exchange to buy or sell when a certain price for a certain commodity (stored at a certain warehouse) is reached.

- The greater transparency of price differentials and locations will improve spatial and quality relations. Thus, those who need commodities will be able to make more rational choices regarding the grade of commodities they need and the place where they want to take delivery. Similarly, if differentials exceed certain thresholds, traders and others will undertake arbitrage transactions, for instance by moving commodities from one warehouse to another.

- Traders will also have more flexibility in selling short (that is, commodities that they do not yet own), because they know there is a market which provides access to a ready supply of warehouse receipts.

- Speculators can become active, as it is much easier to hold a warehouse receipt than truckloads of commodities. This involvement improves market liquidity, and thus reduces transaction costs.

15. From a macroeconomic point of view, it is highly beneficial to have a good system for trade in warehouse receipts:

(a) Trading in warehouse receipts means trading in titles to goods, which in effect implies trading in commodities which can be delivered in the future for a known price. The financial value of the warehouse receipt (if properly construed) would follow commodity prices, thus allowing an effective commodity price hedge for domestic producers, processors and others.

(b) If a more or less "normal" differential between the commodities in a certain location (for example, a port) and a foreign futures exchange is established, the warehouse receipts (if acceptable to foreign buyers) could act as a way for domestic producers or exporters to make delivery to the foreign exchange, even if the warehouse is not listed by the exchange. This would be through the "Exchange of Futures for Physicals" mechanism established by most exchanges: rather than closing out a short futures position, the

producer/exporter would deliver the warehouse receipts to a foreign buyer (receiving or paying the normal differential), who would then take over the short position.

(c) Tradable warehouse receipts are more acceptable as collateral for banks, because their liquidation in the case of default is easier, and because they can be used by the banks as a tool for raising finance. This is likely to attract a larger pool of capital to commodity financing, particularly if such receipts can be discounted by the country's Central Bank, or even by one of the developed countries' Central Banks; in this case, the warehouse receipts would become valid no-risk collateral even for international banks and trading houses.

16. The conditions for the use of warehouse receipts have been described in another UNCTAD document,[4] and they are summarized in the annex to the present document. If these conditions do not yet exist in the country, the exchange should make an effort to stimulate their emergence. Although the possible uses of warehouse receipts are not as wide as those of futures contracts (in particular, it remains difficult for farmers to lock in the price of a product they have not yet produced), organizing an efficient trade in warehouse receipts may be as far as many commodity exchanges can go. As national economies progress, and in particular as all those active in the commodity economy become formal entities with good bookkeeping that can be easily audited, organized trade in warehouse receipts becomes superfluous; in developed market economies, there is little need for it.[5] But this moment is likely to be far off for most developing countries.

17. Some forward trade may already be taking place; if so, the exchange may consider whether it can act as the market-place for it. If a well-organized over-the-counter market is not yet in place, it is quite possible that an exchange floor will indeed, be considered a good focal point for such trade. This will be especially so if the exchange can offer some added value, in terms of ease of finding counterparties, the standardization of contracting rules, and the guaranteeing of contract performance. But exchanges need to be very careful when considering this latter aspect. It should be realized that in terms of risk of market manipulation and market failure, trade in forward contracts is much more dangerous than trade in futures contracts. Forward contracts remain, to a large extent, tailor-made: they are specific to certain delivery locations and certain grades, and are thus, not as easily fungible as futures contracts. Therefore, if something goes wrong with, for example, the production of one specific grade of a commodity for which many forward contracts have been entered into, or the supply of this commodity is manipulated, the market can react very strongly, causing large losses to those on the wrong side

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[4] "Collateralized commodity financing, with special reference to the use of warehouse receipts" (UNCTAD/COM/84), May 1996.

[5] The only recent initiative by a developed market commodity exchange to trade warehouse receipts was the introduction in 1994 by the New York Commodity Exchange (COMEX), now part of the New York Mercantile Exchange, of a system for trading warehouse receipts on copper, in order to ease the delivery process of its copper futures market. In the case of many other commodities (e.g. metals, coffee, cocoa, sugar), there is a very active trade in warehouse receipts (or equivalent titles), but it is organized over the counter, directly among trading houses.

of it. Exchanges would be faced with a potential public relations problem if this were to happen, and would have even greater problems if they were actually guaranteeing contract performance. For this reason, it is advisable for exchanges not to organize and guarantee trade in the forward contracts as already traded in the market, but rather to try to develop futures on the basis of those contracts.

18. In terms of the selection of commodities, one needs to have a good idea about which needs one wishes to meet. Is the introduction of trade in the commodity motivated by the need to provide a central market-place where buyers and sellers can be sure of finding a ready market? If so, the expected benefits of the exchange in terms of reduced discovery costs should be made higher than the extra costs of using the exchange. If the purpose is to "assemble" national risk management needs of small players (such as cooperatives or local traders) that are unable to use a foreign market directly, the contract specifications, as well as the exchange's method of operation and relevant government regulations, must be defined in such a way that larger players can ensure arbitrage between the national and the foreign market.

19. For an auction-type market, the best possibilities exist when a large part of trade passes through one location, and trade channels are not well established (e.g. after the withdrawal of the government). The exchange will be the place where buyers and sellers actually meet (thus reducing the costs of identifying possible counterparties). This is a useful role even as regards export commodities, e.g. coffee, for which the exchange will at best act as a mechanism for price transmission (in effect, the exchange should optimize this function, e.g. provide to all its users the relevant world market prices and their interpretation). If there is no foreign market on which the prices of the commodities traded on the local exchange rely (which will be the case for all commodities which are basically destined for a domestic market), the exchange will also serve as a price discovery centre.

20. If trade is geographically decentralized (that is, if it passes through many centres or ports), it would seem best for an exchange to go straight to trade in warehouse receipts, on the basis of standardized grades, rather than trade in physical products; the alternative is to have several regional auction floors, which may be worth while in some cases, but is often quite expensive. Trade in warehouse receipts has the added advantage that they act as a financing vehicle; therefore, particularly for seasonal crops, their use and trade will be popular even if trade channels are well established. Moreover, it is possible to trade warehouse receipts not only for domestic crops, but also for export products. For the latter, the availability of warehouse receipts is likely to attract new foreign buyers, as it becomes much easier to buy a specific grade of a commodity in the country.

21. It has proved difficult to introduce futures contracts that have as their sole objective the reduction of basis risk problems (that is, to provide a risk management contract which is better tailored than an existing contract to managing the price developments with which the national or regional trading community is confronted). The biggest problem for a new contract of this kind is that of building up sufficient volume: as long as liquidity of a new, "tailored" contract is low, the advantage of lower basis risks may well be offset by the disadvantages of low liquidity (among other things, resulting in high slippage in the execution of orders). For example, many South-East Asian robusta coffee exporters tend to hedge against the New York

"C" (arabica) coffee contract, which at first sight would seem less desirable than the London robusta contract because of even larger basis risks. But they prefer New York for its greater liquidity, which allows them more flexibility in their risk management transactions. Or, to give another example, in 1993 the New York Cotton Exchange introduced its World Cotton Futures contract to complement its existing cotton contract. This new contract was based on Northern European rather than United States cotton prices and is, from the point of view of basis risks, greatly preferable as a hedging vehicle for cotton exports from West Africa, Central Asia and Pakistan, and most imports into Europe (the price of the existing contract is at times strongly influenced by purely domestic developments in the United States, which are scarcely reflected in the prices of cotton in Europe, Africa and Asia). Notwithstanding this, the new contract failed to take off, as traders continue to prefer the high liquidity of the traditional cotton contract.

22. At first sight, it would appear easy to offer a risk management contract for a commodity which is largely produced/exported in the country or region, and for which no futures market yet exists. The creation of a palm oil contract on the Kuala Lumpur Commodity Exchange is an example of this: the contract is a success, being largely based on the risk management needs of the domestic producers, processors and traders, but sufficiently well formulated to allow foreign traders to use it for risk management. Silk and cocoon futures (traded in Japan and, until the operations of the Manila International Futures Exchange were suspended in 1996, the Philippines) are other examples, while international pepper and castor-seed oil futures have been approved in India. However, the range of commodities for which commodity futures contracts might be possible but are still non-existent is rather narrow. Financial futures are another matter: futures contracts for most of the developing countries' currencies still do not exist, which is also the case for interest rate contracts. Financial futures and options, including stock options/warrants, have been the fastest-growing group of futures contracts, and in effect, they would help a commodity exchange in attracting international capital, which may flow over into other contracts (international brokerages, banks and trading houses cannot be members of and present in an infinite number of markets, and will join only those exchanges which offer sufficient value for the money spent).

C. The need to change with the times

23. Exchanges, even if they have been in business successfully for a long time, need to adapt to changing conditions. Technological, legal, political, economic and organizational changes not only provide the potential for new types of activities, but also may cause traditional activities to become redundant. Changes in technology may increase or decrease the capital intensity of production, impacting on the need for risk management. The development of interactive computer systems reduces the role of locational factors in business transactions: it is often no longer very relevant where users are based, or where an exchange is located. Governments may relax their hold over the pricing and marketing of commodities, while regional and international economic integration changes the nature and size of economically integrated areas.

24. Exchanges provide a service, and they can expect to remain in business only as long as this service is needed. They are being used because using them allows buyers and sellers to reduce their costs of conducting trade: speculators are important, but they cannot save a market

when the interest of buyers and sellers of physical commodities no longer exists. Exchanges have to change with the times in order to survive, targeting new users, and introducing new products, instruments and mechanisms. Many of the commodity exchanges that have been created over the years are no longer in existence. Most of those that have disappeared went bankrupt, were closed down by governments or simply went out of business; others have been taken over by rivals, or have merged. Those that have survived and are now among the world's largest exchanges trade, in general, a completely different set of products than when they started. The Chicago Mercantile Exchange, for example, started as an agricultural exchange, and now largely relies on trade in financial futures; while the New York Mercantile Exchange, now the world's largest energy exchange, once traded butter and potatoes.

25. New exchanges in developing countries will be faced with the need to adapt more rapidly and more intensively than their more established counterparts in developed countries, simply because conditions in their countries are likely to change faster. In effect, in many cases, the exchanges themselves - by introducing standard specifications, rules and regulations, and by strengthening the discipline of commodity trade - will create the conditions which make their original activities and contracts obsolete.

26. One question facing many exchanges is whether they should continue focusing on their traditional commodities, or look for new forms of contracts. These could be the introduction of a petrol contract on an agricultural exchange, the introduction of options on the futures already traded, the introduction of an index contract directed towards large investors, the introduction of financial contracts (currency exchange rates, interest rates), or even the introduction of other more sophisticated derivative contracts (mortgage, crop insurance, transport costs, pollution emission rights, etc.).

27. In general, if an exchange provides a well-organized trading system for certain commodities, with well-developed procedures, a good intermediary structure, and a sound clearing house, it can build on these strengths to introduce new products. Futures contracts for a country's currency or domestic interest rates, for example, can be a viable proposition in many countries, and it would then be most logical to trade these contracts in an already existing exchange in the country. Exchange management should be open to possibilities of this type.

D. User focus

28. In general, exchanges can be used by three categories of players: those involved in physical production, trade or processing (in the case of risk management markets, known as "hedgers"); those eager to benefit from market discrepancies (known as "arbitrators"); and speculators, who try to make a profit from accurately forecasting future market developments. The role that each group plays and needs to play depends on the market's stage of development.

29. Exchanges are built on the needs of those active in the physical commodity sector. A sufficiently representative sample of them has to be interested in using the exchange: an exchange will have great difficulty in functioning if only, say, traders or processors are interested. If most of the large buyers are abroad, an effort should be made to stimulate their

participation. One particular group that should be specifically targeted by an exchange is that of government entities and parastatals involved in commodity purchases and sales. For example, the exchange could convince departments which obtain aid in kind (fertilizers, milk powder, cereals etc.) to auction this off through the exchange, rather than distribute it directly; and large public-sector commodity buyers (e.g. the army, the Department of Education) could be persuaded to meet their commodity needs through the exchange (in addition to introducing more competition into this trade, this would help a great deal in eliminating opportunities for corruption).

30. An exchange should not try just to involve large companies. Experience shows that such companies, which have many marketing possibilities and can often afford more risky trading strategies, tend to use exchanges (whether they are physical exchanges or futures exchanges) less than small companies; at least, this is so if these small companies are aware of the existence of the exchange and have information about the way the market in general is moving. Thus, although for the exchange it may involve more work to educate and contact many potential small users than a few large ones, this is an effort that is likely to pay off.

31. When exchanges start moving away from just providing a basic service for the trade in goods on the basis of samples, arbitrators very rapidly become important. Traders and some of the processors active in the exchange are likely to provide much of the arbitrage functions as long as warehouse receipts are traded only for spot delivery. But warehouse receipt trade for forward delivery is likely to evolve rapidly, and then the natural arbitrators are banks. Banks have access to low-cost credit, and their interventions will ensure that the price differentials between contracts with different delivery dates remain as low as possible. Their role will become even greater when futures contracts are traded, and it will thus be vital to involve them closely in the exchange's development planning. One almost essential function of banks when developing futures trade is margin financing: if hedgers are to be able to use futures markets in an optimal manner, they need access to credit to cover margin calls. If necessary, banks should be supported in developing the skills enabling them to provide margin calls secured by physical stocks, contracts and/or other liquid assets. In a high-inflation economy, where commodity contracts for future delivery, and even warehouse receipts, can be used as an inflation hedge, banks may also be interested in learning about the new possibilities that this gives them.

32. Speculators would have difficulty in using a market that trades only physical commodities, but they are likely to be interested in becoming active on markets that trade "paper", since there are no storage problems, and positions are easy to liquidate. There are different groups of speculators of potential interest to exchanges. The first group consists of rich individuals, for whom a placement in commodities is an alternative to investing in stocks or bonds. This is a group well worth targeting even if warehouse receipts, not futures contracts, are to be traded, although in all likelihood, brokers or banks will need to "package" the receipts in such a way that the administrative burden of using the exchange is not too great. The second group consists of the "locals" or "scalpers", i.e. traders who are active on the exchange in buying and selling contracts, generally within the space of the same day. As locals have to make a living by conducting many transactions during the day, each time making (they hope) a small profit in the process, they are likely to be interested in participating in an exchange only once

the trading volume reaches a certain level.[6] The third group- local or foreign investment funds- are likely to be interested mainly in futures markets, and then only if a volume of at least about 2,000 contracts a day (for local or regional investment funds) or 5,000 contracts a day (for the large international funds) is reached.

33. Exchanges need to make an effort to educate and attract the proper users. This is a long and hard process. Exchanges represent a new way of doing things, and it takes a long time to overcome resistance to change. They should thus foresee a long lead time, starting the awareness-raising and educational process as soon as possible. The key groups of users should be involved not only in the definition of contracts, but also in the decisions on the organization of the exchange and on trading procedures. This involvement should continue over time, so as to allow exchange management to react speedily to changes in their users' needs.

E. Creating a friendly environment

34. Even though an exchange may fulfil a useful function for the commodity sector concerned, its potential usefulness cannot guarantee its success. Several other conditions need to be met. For an exchange trading commodities on a spot basis, the following conditions are important:

(a) Supply and demand for the commodity concerned have to be large; there need to be many potential players; and the commodity must be a fairly important component of these players' operations.

(b) The commodity traded must be well standardized; exchange trade is easier if it is also storable.

(c) Pricing must be left to market forces, without monopolistic or undue government control.

(d) The exchange should be supported by major commercial interests.

(e) Well-functioning and accessible services and infrastructure facilities are necessary, e.g. good access roads, availability of transport companies, weighbridges, quality control services, efficient administration, warehousing, and telecommunications (if the warehouses or the transport companies are controlled by only a few companies and not available for public use, they are of little utility from the exchange's point of view).

(f) Judicious government support is required, including a willingness to adopt suitable new regulations/legislation and appropriate oversight over trade on the exchange.

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[6] If exchange management considers that this level will be reached but would like to help the process along, it is useful to devise an incentive programme for locals. Incentives could consist, for instance, of low trading fees, or a temporary monopoly (for, say, two to four years) for those who first become locals.

35. If the exchange is to trade futures contracts, two additional conditions need to be met:

(g) Free market prices must be volatile enough to create large price risks.

(h) There should be enough potential interest on the part of speculators.

36. It is clear that exchanges do not operate in a vacuum. To a large extent, they will have to accommodate themselves to the prevailing conditions, but in some respects they will need to modify these conditions. This is important in particular in the following areas:

- public opinion;
- government regulation concerning the commodity exchange;
- government physical market intervention;
- taxation policies;
- banking regulations.[7]

37. Public opinion will determine to a large extent how governments react to an exchange's real or perceived problems. Although exchanges only reflect prices, it is not unlikely that they will be held as responsible for price developments that are unfavourable for one group or another; for example, farmers may protest if prices decrease, and consumers if they increase. An informed press corps will ensure that these partisan views are reported as such; an uninformed press corps may amplify these complaints, making exchanges an easy target for populist measures. An active public relations programme is thus essential for an exchange.

38. The need for a proper government legal and regulatory framework is discussed in some detail in chapter III. Other government policies regarding commodity markets and commodity trade have to meet certain general conditions, additional to this legal and regulatory framework. In particular, trade should not be interrupted by arbitrary government interventions. Rule-based government interventions do not need to be a problem, but if the physical market is disrupted from time to time by unpredictable government actions, it is very difficult for market participants to manage their operations efficiently - and this is likely to reduce their capacity for, and interest

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[7] It is important to note that monetary policies can have a major influence on the functioning of commodity exchanges. If inflation is high, forward currency or interest rate contracts are not available, and the commodity is traded in the domestic currency, any trade for forward delivery beyond a period of, say, one to three months (depending on how high and how predictable inflation is) will effectively be for purposes of inflation hedging (or for speculation on future inflation rates), not for hedging commodity prices: after all, the price of the commodity at the end of the period will be determined more by the inflation rate than by changes in the real value of the commodity. Commodity exchanges in high-inflation countries should therefore target a public of trade-related users for the use of contracts for nearby delivery, and a public of banks and other financial institution for the use of contracts for delivery further forward. Capital controls can also have an impact, if they prevent the use of domestic exchanges by foreign users; in this case, governments could provide, in their regulations on capital flows, an exception for repatriation of profits made on the country's exchanges by foreign users.

in, using organized market-places.

39. Taxation policy is important. It can be used to provide an incentive; for instance, certain subsidies or tax rebates could be available only to those farmers who sell their products through an exchange; or for imported products which are auctioned off on an exchange, tax collection could be delayed until the buyer actually takes delivery of the products (that is, the exchange is allowed to operate free-port warehouses). Taxation can also be a problem, particularly if paper transactions are taxed as if they were physical ones. If warehouse receipts are traded, taxes should be levied only at the times of original delivery and/or the final taking of delivery: in between, trade should be completely free of registration fees, value-added taxes or other impositions (apart from a very low transaction fee charged by the exchange). For futures trade as well, only actual delivery transactions should be taxed.

40. Regulations in many countries do not allow banks to engage in activities such as commodity trade, the financing of margin calls for hedgers, commodity storage, or the packaging of instruments offered on the exchange for a wider public of investors. They are all potential hindrances to the proper functioning of commodity exchanges and banks and exchanges should therefore work together for an amendment of such regulations.

Chapter II

THE ORGANIZATION OF EXCHANGES

41. This chapter describes the broad principles of organizing an exchange. Who can be involved in its development, and which problems are commonly encountered? Should one go for open-outcry trade or for electronic trading? What is the role of the clearing house? How can exchanges meet their costs?

A. Initiators, ownership, management and membership

42. In most cases, the initiative for creating a commodity exchange is taken either by private-sector commodity traders, or by government officials responsible for domestic trade. Both groups have their own agenda, and differ in their expectations as to what an exchange should do. They should realize that if an exchange is indeed to be introduced successfully, a wider group needs to become involved.

43. Traders tend to see the exchange as a place where they can buy and sell more easily. They are often averse to introducing producers and even processors into the management of the exchange and, in many cases, would like to keep speculators out as long as possible. They are not easily convinced that they will need to put up financial margins to ensure their contract performance, and they resist strong government regulations. They often want delivery possibilities to be limited, so that the risk of having to take delivery of an unwanted commodity at an unwanted location is small. All this is actually detrimental to the exchange's possibilities and thus, in a somewhat longer time-frame, detrimental to the traders themselves.

44. Government officials see the exchange as a way of replacing government procurement and pricing policies. In many cases, however, they continue to believe in the goals of these policies, and will thus, try to ensure that exchanges serve those goals. The result is often excessively restrictive regulation (with direct interventions if the prices on the exchange threaten to move outside the politically acceptable range), a large number of delivery locations and grades (to reduce the risk of manipulation), and again, an intolerant attitude towards speculators.

45. If an exchange and its contracts are to be designed in the interest of the whole economy, those responsible for this design should have an open mind, and a direct link to all groups which are potentially concerned. Traders, representatives of producers and processors, brokers, banks and government officials should all be involved, in one way or another, in exchange and contract design.

46. To a large extent, whether an exchange will be successful or not depends on its management. Managing an emerging exchange is perhaps one of the most difficult jobs around. Managers need to think, to plan ahead and to formulate a mission statement; at the same time, they should act, make the mission statement known and implement development programmes. Managers need to comply with members' wishes, but only to a certain extent: in practice, if they only follow and never lead, they can hardly be innovative. Managers need to be aggressive,

identifying commercial possibilities in an active manner, even outside the traditional clientele or existing product mix; at the same time, they need to be conservative, not excessively optimistic about commercial possibilities, and not hasty in the introduction of new contracts.

47. In existing exchanges, it is often very difficult for exchange managers to develop a dynamic development strategy. Exchanges are often controlled by a small group with a rather limited range of interests, and often without a view regarding future possibilities. The members of such a group are used to the way the exchange has been operating, and have been able to make profits. Therefore, they may feel threatened by the prospect of change in any form: stricter financial or contract execution conditions, more complex instruments or new board members. A lack of vision and internal resistance to change constitute a very general problem in exchanges, which, together with the fact that they need to be able to adapt in order to survive, may explain why so many have gone out of business. A pragmatic approach sometimes helps to overcome resistance. For example, if trade so far has been handled through a small number of brokers, who will thus resist the introduction of a more open system, they could be given free seats on the new exchange floor; as these seats can increase in value dramatically if the exchange is successful, these brokers suddenly have an interest in promoting the new venture. In many cases, to ensure the necessary dynamism the best solution is to attract an outside manager, e.g. from the financial sector.

B. Going electronic

48. Virtually all the commodity futures exchanges which have been created since 1990 have chosen electronic trading systems. Many of the new contracts introduced on well-established open-outcry exchanges are being traded only on electronic systems, not on the open outcry floor. Most of the recent initiatives for inter-exchange cooperation have been based on electronic linkages. Even a number of exchanges trading for physical delivery have opted for electronic systems. Does this mean that with the advances in telecommunications and in computer systems, and the concomitant cost reductions, electronic trading systems should be the automatic choice for new exchanges? No. Although all exchanges can benefit in one way or another from the remarkable progress made in communications and computer technology, forgoing the traditional open-outcry trading system in order to go completely electronic is in many cases not advisable.

49. Box 2 gives a broad overview of differences between the open-outcry and electronic trading systems. In an open-outcry exchange, buyers and sellers (or the brokers representing them) are active in one physical location, undertaking transactions during fixed trading hours. These transactions are then (with only a short time lag) recorded on a computer system, which also transfers, often worldwide and on a continuous basis, the prices that occur during this trading session. In an electronic trading system, buyers and sellers are connected through a computer network which automatically gathers and distributes information on transactions and prices. They do not need to move their offices in order to be physically in one place, but can instead trade from their existing offices, thus avoiding the costs of building/equipping an open-

outcry exchange.[8]

50. In general, if buyers and sellers are already physically in one location, or they will need to be in one location once the exchange starts functioning, it is preferable to use an open-outcry system. If the building is already there, equipping it with an open-outcry floor can be relatively cheap, the risk of a systems breakdown is low, and, what is quite important, locals are more easily attracted because they thrive on the information and gossip available when many companies are concentrated in one place. On the other hand, if physical trade is already well organized (and, therefore, there is no need to channel physical commodities through one location), and the potential users of the exchange have offices throughout town, an electronic trading system may be the lowest-cost solution, albeit with the disadvantage that it may be difficult to attract locals. An electronic system has high set-up costs, even though several possible computer software programs can now be bought off the shelf; but once the system has been installed, it is easy and cheap to add new products. Regulators sometimes use ease of regulation as an argument in favour of an electronic exchange; there is truth in this, but ease of regulation is not as important as it may seem, as will be discussed in chapter III.

Box 2

OPEN-OUTCRY VERSUS ELECTRONIC TRADE

	Open-outcry	Electronic trade
What?	Centralized trading floor, with buyers' and sellers' representatives	Buyers and sellers interconnected through a computer network
Why?	More physical-trade-related	More risk-management-related
When?	Buyers and sellers are or need to be in one place	Buyers and sellers are dispersed
Costs	Physical infrastructure; relocation	Operating systems; telecommunication costs
Advantages	Role for locals; low risk of breakdown	Easy to add new products; long trading hours; perfect recording of operations

51. As an alternative to an electronic exchange, open-outcry exchanges may consider using electronic means to link up with other exchanges (see box 3). It would be cheaper if this were done for exchanges in different time zones; if they are in the same time zone, an interactive computer network needs to be developed.

[8] At least, they should save on these costs: for various reasons, a number of exchanges decided to put all the computers that give access to this electronic system into one trading hall, a decision that necessarily led to their incuring both the infrastructural and relocation costs of an open-outcry exchange, and the systems development costs of an electronic exchange. Many of these exchanges have since gone out of business.

Box 3

ELECTRONIC TRADING LINKS

There are different ways in which electronic trading links between exchanges can be set up. One is the concept of feeder exchanges: new exchanges act as a trading floor for a foreign "mother exchange" (for instance, but not necessarily, during after-trading hours) and all deals are cleared on the mother exchange, which also provides all other trading services. This is now the most widespread model of futures trading cooperation, the concept having already been propagated by UNCTAD in the late 1970s and early 1980s as one way in which developing countries could receive their share of the futures trading pie. The great benefit of this type of system is that one obtains immediate access to the liquidity of the foreign market, and to its services. The disadvantage is that one misses out on some of the financial benefits of the exchange (most services are performed by the foreign entity), and that one lacks control over the market-place.

The concept of feeder exchanges is clearly not acceptable to some countries. In another model, linked exchanges would be more equal: the exchanges which are linked would be acting as different trading floors and access points for what basically would be one regional exchange. Existing exchanges maintain their national identity, and deal with their members' regulatory oversight, educational supervision and examination, and clearing operations. The various services would be split among the participating organizations, with one clearing house which is finally responsible for clearing the net position of the clearing-houses of the separate exchanges.

One step further is to create one exchange without trading floors: all trade would be done directly through an electronic network. Terminals can be placed in many countries, for in such a system it is not relevant whether a trade originated in Argentina or Zimbabwe, in the United States or Uruguay. The various services (clearing, compliance, servicing the system) can be centralized, or they can be split among participating countries.

One problem with linked exchanges is that they depend on a reliable communications network. Costs, in particular those of leasing telephone lines, may be high: the costs of keeping a line open between exchanges may be much higher than the costs of trading on a foreign exchange through a broker, who has communication costs only when a trade is placed, executed and confirmed. Also, delivery and settlement problems may be difficult to avoid. Cash settlement would help to avoid them, but is feasible only if liquid markets exist at the different possible delivery points, which is unlikely to be the case. One potential problem of an electronic exchange is that it may be less attractive to "scalpers", local traders who are responsible for a large part of liquidity on a trading floor; but there is no reason why scalping in itself, cannot be adapted to a computerized environment.

Another problem is that jurisdictional battles between various government ministries over which one is to regulate exchange business may ensue once regional or international cooperation begins to be discussed. There are also likely to be conflicts of interest on issues such as "who choses and controls the hardware?"; "who develops, controls and maintains the software system?"; "who does the clearing?"; and "how will the exchange be regulated?"

52. Electronic linkages do not need to be expensive. In Brazil, it cost about US$250,000 to link 27 of the country's 28 agricultural (spot) exchanges, allowing the simultaneous posting of bids on all these exchanges through the already existing network of the Banco do Brasil, the country's largest agricultural bank.

C. Clearing operations

53. One of the main roles that an exchange can play, irrespective of its level of development, is to provide a disciplined market-place, thus reducing the risk in trading. There are several ways in which it can do this. For instance, it could organize the dispute settlement (arbitration) functions for all the trade that takes place through the exchange, and if a buyer or seller is awarded financial compensation, guarantee that it will be paid. In the case of warehouse receipts, the exchange could guarantee the presence of the commodities represented on these receipts (backed, of course, by a proper system to accredit warehouses, appropriate insurance held by the warehousing companies, and regular monitoring of the continuing solidity of warehouses' operations). In the case of forward (or futures) contracts, the clearing house needs to ensure that obligations to make or take delivery in the future at a certain price are met. And although it should be careful to work with banks, rather than attempting to replace them, it can play some useful financing roles (see box 4).

54. In providing either finance or guarantees, the exchange, in a way, puts its own name against that of the original buyer or seller. Rather than being exposed to the risk that the original buyer or seller (or the warehouse issuing a receipt) will default, those active on the exchange will be exposed to the risk that the exchange (or its related clearing house) will default. If the exchange and its clearing operations are properly structured, this clearly reduces the risks of trade, and thus its costs.

55. If the exchange organizes futures trade, it needs to have a well-managed system for obtaining financial performance guarantees from the exchange's users; these should pay initial markets on initiating positions, and variation margins (also called margin calls) in the event that futures price movements are unfavourable. Because it obtains these financial guarantees, the exchange (through its clearing house/department) can guarantee, with close to absolute certainty, a perfect contract performance.[9] There are different ways to structure clearing operations. The main ones are as follows:

- *Organization of a clearing department within the exchange.* The financial soundness of this clearing arrangement would be ensured through the financial soundness of the clearing members of the exchange, and the earmarked capital they may have set aside as a specific guarantee. This system has the advantage that all the earnings of clearing operations (which can be significant) remain within the exchange. On the other hand, it would provide sufficient security only if the clearing members are very sound, large corporations (as in the Singapore Commodity Exchange, where they comprise several triple-A companies), or when a very large capital guarantee fund has been accumulated over the years (the case, for example, of the Chicago Board of Trade). This arrangement is unlikely to provide sufficient comfort in the case of new, developing-country exchanges, although it may be sufficient in cases where exchanges provide only limited financial functions.

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[9] It should be noted that it is best if this guarantee is not provided to all users of the exchange, but only to the clearing members (that is, if a client of a clearing member defaults, it is the responsibility of the clearing member to make up for the loss). This ensures proper self-policing of the system.

Box 4

COMMODITY EXCHANGES AND CREDIT

Commodity exchanges are trading tools, not financing tools. Exchange management should be careful when taking on financing roles; for instance, campaign credits (e.g. the provision of inputs to farmers who are likely to sell through the exchange) would be better left to traders. Nevertheless, exchanges can play an important role in facilitating access to credit, in both a direct and indirect way, and for products that have already been produced as well as for products that are going to be produced over the coming year or so:

- The mere existence of an exchange makes it easier for banks to provide credits to the commodity sector, for two reasons: the price information makes it easier to evaluate credits on a continuous basis; and if the exchange has taken commodities as collateral for the loan, it is easier for the bank to liquidate the stock for a fair price in the case of a loan default.

- The contract discipline imposed by the exchange will reduce counterparty risks: unreliable traders are weeded out by the system (and it will become relatively easy to check which companies are not reliable). This reduces the risks of lending to the commodity sector.

- Although warehouse receipt finance can exist without there being a commodity exchange, the presence of an exchange will facilitate the use of this form of finance, particularly if the warehouse receipts become tradable.

- The exchange can provide direct security for loans to buyers. For example, a seller's products are placed in a warehouse; and the buyer, upon buying the products, pays only a, say, 10 to 20 per cent performance guarantee to the exchange until the time he actually takes delivery of the products from the warehouse (he will, of course, also have to cover the warehousing costs, and extra guarantees could be requested for longer-term storage and if prices move adversely). With the help of a bank credit, the exchange pays the seller the full sales price, minus exchange commission, immediately.

- If reliable warehouse receipts exist alongside a futures and options market, commodity stocks become very secure collateral, reducing the risk of loan default to close to zero for banks conversant with the techiques of warehouse receipt finance.

- Exchanges can be a party in trilateral agreements with producers and banks (or, instead of the latter, traders providing inputs on credit). The producer promises to the bank that he will sell his products through the exchange; and the exchange promises that the proceeds of future sales by this producer will be deposited in an escrow account. As long as the producer indeed produces as expected, and prices are not unexpectedly low, loan reimbursement is relatively certain, especially if the exchange is the main market outlet for the products concerned: If the producer wishes to default on the loan, he needs to find clients outside the exchange, probably securing a significant discount in the process.

- The existence of standardized contracts on the exchange allows non-traditional financing sources (e.g. insurance companies or pension funds) to place part of their funds in commodity markets, thus providing a new supply of relatively cheap credit.

- If forward contracts are traded on the exchange, the exchange can try to convince banks to use them as collateral for loans: even though the exchange will not guarantee contract performance, the performance guarantees paid by both buyer and seller, plus the sanctions which the exchange can apply if either party defaults, increase the security of the transaction from a bank's point of view.

- *Organization of an independent clearing house outside the exchange.* Members of this clearing house, which would normally consist mostly of banks, will undertake the clearing functions and ensure the financial soundness of the market, in return for a fee. This arrangement has the major advantage that the involvement of well-capitalized institutions, with good credit ratings, will assure potential users that the market is indeed sound. In order not to lose all the financial benefits of the clearing operations, it would be advisable for the exchange, or its members, also to take an ownership share in the clearing-house. In the case of developing countries, consideration could be given to the creation of a clearing house in which all exchanges in a country or region participate (together with some banks).

- *Using the services of an established clearing house.* The advantages of this are that such a clearing house has a good reputation, and that it already has all the systems needed for efficient clearing. The disadvantage is that the earnings from clearing are forgone.

56. If one organizes a new clearing house, either alone, or in cooperation with other exchanges in the country or region, it is essential to develop proper operational systems. Clearing houses or departments need to be not only well capitalized, but also fast, independently controlled and suited to the market's conditions. For example, when futures are to be traded, the system should ensure that all margins are paid between the closure of a day's trade and the start of the next day's trade, and that they are paid on a net rather than a gross basis.[10] Efficient systems can be purchased on the market, and such a purchase would normally be cheaper than trying to develop systems on one's own.[11]

D. Financing the exchange in its initial years

57. As observed by Machiavelli, "there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things". To the political dangers can be added, evidently so in our capitalist times, the risk of becoming bankrupt or- perhaps worse- never getting off the ground because of a lack of start-up capital. It is not cheap to get an exchange started: research costs infrastructure and promotional activities amount to at least US$100,000 for a relatively simple exchange to over US$2 million for a new futures market. Then there is the problem that the learning curve of users is long: even if a new contract is successful, it will in practice often take over five years before users feel sufficiently comfortable to make intensive use of it; and thus

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[10] If a trader buys a July contract and sells an August contract, the total potential loss is not the potential loss on the July contract and that on the August contract; rather, it depends on the way the two contracts move in relation to each another. If the price correlation between the two contracts is high, the loss potential is low. Accordingly, a low margin should be paid. Similarly, option positions should be added to futures positions to arrive at a net maximum loss potential. If such net margining is not used, relatively little arbitrage is likely to take place, thus greatly damaging the liquidity of a contract.

[11] Relatively sophisticated hardware and software for setting up a back-office for a futures and options exchange, and its clearing operations, costs altogether in the range of US$1 to 2 million.

for many years, the exchange will have to cover its costs while having a relatively low turnover.

58. A well-established exchange will have easy access to the finance needed to launch a new contract and continue its promotion; also, its existing contract base will allow it to wait out the long gestation period of new contracts. For new exchanges, things are much more difficult. The rest of this chapter describes ways in which new (or small) exchanges can raise the necessary investment capital for launching (new) contracts, and survive the up to seven lean years which are likely to follow.

1. *Investment costs*

59. Creating an exchange means, among other things, investing in contract development, infrastructure and promotional activities. Even if the initiators of the exchange already have a building, there will be a need for refurbishing; computers, software and laboratory equipment will have to be bought; the area around the exchange will have to be made suitable (loading/unloading space, weighbridges); and possibly, warehousing space will need to be constructed.

60. A good way to finance these investment needs is to sell seats. In the alternative system, in which trading rights are conferred on the basis of membership, anyone who is interested in using the exchange can become a member, paying the same fee as everyone else. Seats confer trading rights on a select group: the number of seats is limited, and outsiders will only be able to trade on the exchange through the holders of seats. Having one or more seats not only makes it possible to benefit from brokerage fees (while saving the brokerage fees one would have had to pay for exchange trade if one had not bought a seat), but also makes it possible for seat holders to benefit from the increase in the value of seats (an increase which in many cases has been truly astronomical). By selling seats, therefore, an exchange receives not only money based on the "real", current value of these trading rights, but also a "premium" based on the possibility of large future earnings. The seats provide an investment opportunity, and beyond the narrow circle of likely immediate users of the exchange, many other companies, including banks and foreign trading houses, are probably interested.

61. Seats also help to align members' interests and the interests of the exchange. This is a good way to overcome initial resistance (e.g. if certain parties are stakeholders in the system which will be replaced by the exchange, they can be offered seats on preferential terms). It also makes each of the seat owners an "ambassador" for the exchange; this is particularly interesting if the exchange has indeed attracted banks and foreign trading houses.

62. The costs of developing an exchange could be reduced if several exchanges cooperate, be they in the same country or regional, or in different parts of the world. To a large extent, the problems with which exchanges are confronted and the type of regulatory, publicity and training materials they need to develop are similar. Various possibilities for cooperation so as to reduce start-up costs are discussed in box 5.

63. It is worth mentioning that many of the established commodity exchanges and some international organizations have developed much material, including regulatory rules, extensive

Box 5

FORMS AND MEANS OF COOPERATION AMONG EXCHANGES

Coordination and cooperation among exchanges can help to reduce the costs of introducing and trading contracts, and can help to reach as large a group of potential users as possible. Even if no immediate trading cooperation is foreseen, it may be wise to coordinate already the physical (hardware and software) trading systems used, so as to allow for possible cooperation at a later stage, since later on, it may be very difficult to make systems compatible.

The most basic form of cooperation would be a regular *discussion on plans*. This would help to identify possible further actions at as early a stage as possible. A next step would be to *discuss contract specifications*, in order to ensure that these are of relevance to all parties concerned. Small changes in the planned contract design may help to make futures contracts easier for foreign entities to use. The quality of contract definitions, including in particular its delivery specifications and modalities, are of paramount importance for attracting not only regional but also international participants. An existing contract can be made more useful to possible participants from other countries by *adding new delivery locations*.

An eminently logical step would be to cooperate in the *undertaking of studies, sharing of know-how and the organization of regional training*. This would avoid duplication of efforts and thus save money; it would also help to prevent the same mistakes from being repeated time and time again. Studies can be on, for example, the potential of new commodity futures contracts; hardware and software systems to be used; and ways to achieve joint objectives, e.g. attracting the region's investment funds. The sharing of know-how would make it possible, for instance, to diffuse experiences with the clearing of options, or experiences with promotional campaigns directed at groups within the country such as plantations or end-users; some exchanges may have had more success with this than others. Regional training can involve the joint development of training packages for cooperatives, for example; or it can involve activities such as providing internships in already functioning clearing houses, or outplacement of experienced staff in a newly formed exchange.

What should also be considered is *cooperation in clearing arrangements*. A strong clearing house is necessary for attracting business, and the operation of clearing systems is often one of the largest costs of operating an exchange (at least, from the users' point of view; from the clearing members' point of view, it can be the most profitable part). In the United Kingdom, all exchanges are cleared by one central clearing house, which also clears some overseas exchanges. In the United States, as a cost-cutting measure, various exchanges have already decided to cooperate in their clearing arrangements, and in at least one case, have already merged their clearing houses. Even if this option is not yet on the table, it is likely to come up at one time or another, and early coordination of practices and systems used can help to make later close cooperation easier.

Discussion among exchanges and their regulators can also help to create a framework of *enabling government policies*, making it easier to use exchanges in neighbouring countries for example, through making transfer of funds easier, or by allowing physical commodities to be used as collateral for futures transactions. Current government policies are not always helpful: among other things, there is a lack of clear policies on the taxation of profits and losses on commodity payments, and the transfer of funds is often illegal or severely restricted.

When regional use is made of an exchange, the countries concerned would benefit from *cooperation in regulatory enforcement*, and measures to clarify the jurisdictions of various regulatory agencies. The most far-reaching form of cooperation would be the creation of strong *trading links between exchanges*, through electronic means.

training material and operational manuals, that can be of direct use to a new exchange. Although limited, there are also some possibilities as regards obtaining direct support. Both the Food and Agriculture Organization and the World Bank at times provide financial support for the development of the physical infrastructure of new exchanges (as long as they are of the auction-type); the Inter-American Development Bank has a grant facility which can help commodity exchanges meet much of the initial cost of exchange development; and some bilateral donors (e.g. the United Kingdom's Know-How Fund, in the case of republics of the Common wealth of Independent States) are in some cases willing to provide support, in grant or loan form, for exchange development. A few of the large developed-country exchanges (particularly the Chicago Board of Trade and the Chicago Mercantile Exchange) have in the recent past shown interest in taking a direct part in the development of a new exchange.

64. A great part of the systems and know-how that are developed, at substantial cost, to set up an exchange could well be relevant for other exchanges in the country or the region. One specific way for an exchange to derive value from its experience is to create an independent stock company which buys all the exchange's systems and know-how; the exchange then leases this back. Other exchanges can be allowed to become shareholders in the new company, and can also lease its systems and pay for its support.

2. *Running costs*

65. Even if an exchange offers a perfectly sound and much-needed contract, it may take years for turnover to develop sufficiently to make it self-financing. Raising transaction fees to the levels needed to achieve that is not a solution, as this will erode use. In the case of futures markets, experience shows that hedgers normally make relatively limited use of the market for three or four years, the time needed to make everyone acquainted with the new instruments available, and to install proper company management procedures. It then takes a further two or three years for use to grow to a level which, for the company, is optimal. New exchanges thus have either to plan for having sufficient financial reserves to survive for this five- to seven-year period, or to look at alternative sources of income.

66. Unfortunately, it may be dangerous to try to increase earnings from activities directly related to exchange business. The exchange could try to benefit fully from clearing-fee earnings; but if this means that the clearing house consists only of poorly capitalized members, potential users may be discouraged. The exchange could also try to earn income from information sales, but this would be directly at variance with the importance of its being seen as a main price-setting centre. Some forms of cost-cutting are also risky: especially in the initial years, good awareness-raising, training and educational programmes are essential.

67. Part of the running costs of an exchange can be met if the exchange keeps some seats to auction off each year - for example, of a total of 200 seats, 150 are sold off at the initiation of the exchange, and 10 in each of the following five years. Another way in which an exchange may survive these lean years is for it to be assigned, by the government, a certain para-public responsibility for which it can charge a fee. This is an attractive option for the exchange, and from the government's point of view; while ultimately this is not the type of responsibility that an exchange should be taking on, in the short run it may be the best-placed entity to undertake

certain activitities. In Turkey, for example, commodity exchanges obtain the major part of their earnings not by organizing the physical trade in commodities, but by registering commodity trade in their region. A more logical responsibility for exchanges would be to regulate brokerage activity. Exchanges in any case need to supervise all the activities of the intermediaries active on their exchange (including their activities abroad), and the scope of this supervision could be explicitly broadened to include all use of foreign futures and options exchanges, with an appropriate (very low) tax on each transaction.

Chapter III

REGULATORY NEEDS

68. As long as an exchange acts only as an auction of commodities that are physically presented at the exchange, not much regulation is needed - only some oversight to ensure that the auction is indeed open and not manipulated by some buyers. However, when paper starts to be traded (and, as has been argued before, this is the minimum stage an exchange should strive to attain), the legal and regulatory environment already starts to become important: the paper traded represents rights to commodities, and these rights need to be enforceable.

69. With the increasing complexity of instruments traded on the exchange, the role of proper regulation increases. Once intermediaries start playing a role (which should already be the case once warehouse receipt trading becomes reasonably active), they need to be regulated. With an increasing volume of transactions on the exchange, their actual execution becomes important. When futures contracts are introduced, market manipulation becomes a possibility against which regulation needs to provide protection. Unless otherwise mentioned, this chapter basically discusses the regulatory needs of exchanges that have a liquid trade in warehouse receipts (with the participation of speculators through intermediaries), trading forward or futures contracts; but this is not to say that other exchanges can go unregulated. Exchanges should meet many of these regulatory needs themselves, and others can be met by other self-regulatory organizations such as brokers' associations. Nevertheless, the government plays a key role in providing the framework within which this self-regulation can take place.

A. The role of the government

70. No market functions in a vacuum. In order to be efficient, the market needs the government to play two active and committed roles: an oversight role, the government disciplining those who try to manipulate the markets for their own benefit, and ensuring the sanctity of contracts; and an enabling role, the government providing the necessary legal and regulatory framework, and even part of the infrastructural framework (without which market actors cannot function properly). Markets need the government, but overregulation should be avoided.

71. Overregulation normally results from a lack of understanding about the functioning and purpose of commodity exchanges. Such exchanges, if they function well, are but an image of physical markets. Supply and demand conditions on the physical market, which would otherwise be known only to a small number of well-placed companies, are made visible for all to see, through the functioning of the futures market. If supply and demand conditions are bad, the exchange may be the bearer of bad news for the government, but should not be blamed for this.

72. Commodity exchanges have a long-term interest in ensuring that their price formation process functions properly. Through self-regulation and self-policing, they should normally prevent price manipulation attempts from being successful. However, the short-term interests of a select group or even incompetence on the part of exchange managers may weaken this self-

regulatory process, so much so that prices on the exchange are no longer representative of the underlying supply and demand conditions, but instead are determined by a handful of larger traders. It may also happen that an exchange allows its brokers to trick their customers, through a variety of means, because exchange management is lax in its trading floor controls; or that the clearing house becomes pliant as regards one or more of the traders, no longer insisting that they pay their margin deposits promptly, and thus endangering the financial security of the exchange. Potential direct and indirect users of the exchange (those who use it for marketing or risk management and those who use only the price information) have to trust in the system's capacity to prevent this type of occurrences- and this trust is most likely to exist if a vigilant government agency controls the functioning of commodity exchanges.

73. Such an agency should not only ensure that all commodity exchanges are established according to certain rules, but also have a say in the nomination of exchange management and be able to check the exchanges' self-regulatory process. The regulatory intervention should be most active at the time of the establishment of the exchange and of contracts: if contracts are well formulated, delivery modalities provide a first, and very effective, line of defence against attempts at manipulation. Thereafter, the government agency should act as a watchdog, intervening only when necessary; this will give the exchange the stability that participants need to make efficient use of it. For example, it should license the exchanges and approve each of their contracts on a permanent basis, with the explicit right to withdraw recognition when the government deems this necessary. All this incurs costs for the government, and it is fair that these are recuperated through taxes on exchange business: the government provides a service to the exchanges, and should be paid for this. Nevertheless, as in all emerging industries, it can be argued that in the initial phase, when exchanges are still small, the government should refrain from imposing heavy taxes on them, for this would unduly increase transaction costs. This, in turn, may deal a fatal blow to their growth potential. In any case, government taxes on exchange turnover that exceed the costs of regulation are difficult to defend: capital gains or income taxes should provide sufficient possibilities for taxing the exchanges' high earners (and contrary to what some think, not all of those active on the exchanges will fall into that category).

74. In an economic environment that is becoming more and more international, a purely domestic regulatory approach will not suffice; those who want to manipulate a market could use foreign intermediaries. Therefore, the government may find it useful to sign so-called memorandums of understanding with regulatory agencies in other countries, which provide for mutual cooperation in cases of suspected abuse.

75. In conclusion, the relationship between commodity exchanges and the government need not be one of adversaries. Insufficient understanding of the role and usefulness of commodity exchanges can indeed lead to policies that hurt the exchanges and their users. But exchanges cannot do without the government, and without a framework which can be created only by the government. Governments need to police the exchanges so that direct and indirect users can rest assured that they do indeed serve the public rather than a particular private interest. They also need to facilitate - or rather, enable - the functioning of exchanges through the provision of an appropriate legal and regulatory framework. Taking into account the large potential benefit of commodity exchanges for a country's economy, governments can also facilitate the growth of emerging exchanges by providing targeted support.

B. Self-regulation

76. It should be clear that where an exchange or self-regulatory organizations, especially of brokers, do not regulate, the government has to step in. It is thus in general preferable that exchanges and, as will be discussed in the next section, brokers initiate vigorous self-regulatory activities.

77. The exchange needs to equip itself for this self-regulatory role. Whether it trades futures or only warehouse receipts, it needs to have capable audit and compliance staff, as well as a computer system that is able to track and analyse what happens on the exchange. All member firms need to be audited at least once a year, and the exchange should have the power to audit them more frequently if necessary. All activities of members need to be regulated (to monitor members' risk exposure on other markets), including activities in foreign exchanges. The exchange must ensure that brokers and their staff are properly licensed, by the exchange itself or by some other competent agency. It needs to be actively monitored whether members continue to meet capital adequacy requirements. The exchange needs to have the power to severely punish wrongdoers once abuses have been detected.

78. In terms of types of regulation, once it reaches the level of futures trade, the exchange needs regulations and concomitant procedures in five areas:

- *Floor operations*. These need to be monitored, e.g. through voice or video recorders, with exchange clerks present on the floor to check what is happening. For trade, properly designed forms need to be used, leaving little room for error; these forms need to be consecutively numbered. Also, all orders should be time-stamped.

- *Back-office operations*. Orders, once filled, should go immediately to the back-office, where they are input into a computer system on a continuous basis. Back-office staff should be trained in detecting abuses, and be equipped with software systems to discover triangular deals, front-running and other irregularities.

- *Customer protection*. First, not everyone interested in speculating on the exchange should be allowed to use the market: the exchange (or the self-regulatory association of brokers) should set minimum conditions in terms of speculators' wealth, and of their capacity to understand the risks of speculation. Brokers should be entrusted with ensuring that these conditions are met, and that customers do not risk more than a certain percentage of their net worth. Customers should be made to sign a standard form stating that they understand the risks of speculation. It would be preferable if brokers were not allowed to trade on the account of a customer until, say, one week after the signing of this form, during which time a customer could reconsider his interest and possibly withdraw the authorization he had given to the broker to trade on his behalf. Secondly, the procedures for order filling need to be carefully devised, so as to ensure that brokers indeed represent the interests of their customers in the best possible manner. One good way to do this is to time-stamp every part of a transaction, from initial receipt of the customer's order to the filling of the order.
- *Anti-manipulation measures*. A proper formulation of contract specifications will already

make it very difficult to manipulate an exchange successfully. Nevertheless, a back-up system which actively monitors market use to detect attempts at manipulation is necessary, and the exchange needs to have the power and the capacity to intervene if abuses are detected. For the exchange to have the necessary information, brokers need to report to it on a customer-to-customer basis. Exchanges should also do their best to ensure that parastatals and other semi-public entities which play a large role in commodity trade put in place the proper internal controls to reduce the likelihood of abuse by their managers.

- *Measures to ensure market integrity*. As mentioned before, the key reason for using an exchange is often that the exchange puts its credit in the place of that of all counterparties. Evidently, the better the exchange's credit rating, the more this factor counts. Exchanges thus have to ensure that the market believes in their financial integrity. The structure and operations of its clearing house are the central element in this. The clearing house needs to be well capitalized and well managed. Clearing-house operations need to be objective, with all market users made to obey the rules: as past failures have shown, no exemptions should be granted, irrespective of the size or political importance of the entity requesting an exemption.

C. The regulation of brokers

79. As soon as a market comes into existence, there will be people trying to abuse it, and others who use it badly. In the case of commodity exchanges, often poorly known and understood, the blame for this is likely to be put at least partly on them. They thus have an interest in reducing the likelihood of abuse and wrong use. Brokerage regulation (discussed here) and a vigilant attitude towards the use that is being made of the exchange (discussed in the next section) are the key elements in this effort.

80. Proper regulation of brokers is best effected through a self-regulatory association; as long as such an association has not been created, exchanges can assume the relevant responsibilities. The first task of brokers' associations would be to vet applicants, checking their reputation, including their police records (if any); in general, anyone convicted of fraud should be excluded. Then, applicants should be made to meet certain minimum net worth requirements. In emerging markets, this may prove to be a problem, with one possible solution being to stimulate better-capitalized members to take them under their patronage. Brokers should contribute to a customer protection fund (a so-called fiduciary fund) to compensate customers who have been defrauded by brokers. They should have an arbitration board, with broad powers, to settle disputes between members and customers. Brokers should be made to follow certain rules; for example, they should not be allowed to promise fixed returns and/or no risks, or to make other misleading statements.

81. As it has become increasingly easy for people to move from one country to another, the brokers' associations in a region would do well to cooperate. Such cooperation can include the elaboration of common policies and practices, the acceptance (as new members) of brokers who have already been approved by another brokers' association, and the blacklisting of brokers

which have been banned from trading in any of the other countries.

82. Ensuring that legitimate brokers engage solely in legitimate activities is only part of the job. One common problem, even in countries with long-established commodity exchanges, is that customers are enticed by companies or individuals that call themselves brokers, but who are in reality not members of any brokers' association and who, even if they may claim to be, do not in general trade on an exchange; instead, they pocket the payments made by their clients, and vanish once these clients start claiming the profits that were supposedly made. These "bucket shops" often find their victims among relatively vulnerable parts of the population, such as immigrants or pensioners. Governments have an important role to play in detecting and prosecuting this type of activity, but exchanges and brokers' associations can also help by explaining to the public at large the differences between legitimate and illegitimate brokers.

D. Should the buyer beware?

83. Commodity exchanges have many benefits, but one should not oversell their risk-reducing possibilities. Every type of transaction which has an element of future delivery or sale carries risks. Even if a company manages risks in the best possible manner, something may go wrong. For instance, a particular circumstance may arise in the market which causes the price of its commodities to move away from those underlying the exchange contract, thus resulting in losses. Alternatively, companies may use contracts in a way that at first sight looks good, but carries hidden risks. Or those responsible for actually deciding on the transactions may not follow company supervisors' instructions.

84. It may be argued that this type of problem is each company's own problem. Indeed, this is the position of most Western exchanges. However, in the case of developing countries, it would appear advisable for exchanges at least to make an effort to educate users about potential risks, and warn them in specific circumstances. For this, they should actively monitor the way their contracts and prices are being used in physical trade, and publicize any hidden dangers that they feel may exist.

85. Exchanges need to have a mission statement which stresses their public benefits. Apart from making this mission statement known, they should state clearly and repeatedly that their function is to provide a service to those active in physical trade, and that it is not their purpose to attract people who want to gamble on the way prices are going. In cooperation with brokers' associations, they should warn the public of the risks of speculation, and their training and promotion activities should focus on the safe use of risk management instruments. The material distributed to potential users should include guidelines on the risks of abuse by a company's traders, and on company control systems and procedures which would minimize the risk of such abuse.

86. Exchanges may consider providing extra services to their users; for example, those using them could indicate on a voluntary basis what they want to be their maximum exposure. As brokers report their business on a customer-to-customer basis to the exchange, the latter knows each customer's total position. Should this exceed the level indicated by the customer's

management, the management of the exchange can directly contact the directors of the customer company to warn them. The directors may have been aware of this already, but if they were not, this warning allows them to identify improper transactions by individual traders and take appropriate action to prevent any problems from growing.

Chapter IV

GETTING THE DETAILS RIGHT

87. To go from the concept of a commodity exchange to real operations is difficult, for one needs to introduce a whole process, with each part of it properly organized. This chapter discusses some of the practical aspects of getting an exchange going, from the physical layout of the exchange and the formulation of its contracts, to the preparation of the contract launch. It should be stressed that contracts and procedures need to conform to local trade practices; simply copying foreign rules and procedures is likely to create problems. An overview of the main aspects is given in box 6.

A. Exchange location and layout

88. Exchange location is particularly important if the exchange is of the auction-type: sufficient space needs to be available for unloading, warehousing and loading the commodities that are to be traded, and the access roads to the exchange need to have sufficient capacity for all the trucks that are likely to pass. If trade is to be on the basis of samples, the collection point can be at some distance from the exchange, but as samples will need to be brought to the exchange rapidly, and sellers will probably prefer to be present when their products are sold, this cannot be more than a few minutes away. In any case, sufficient laboratory capacity is needed to test within an acceptably short time all the samples likely to be brought in during the peak season. All this can be a messy and noisy business, and in view of the heavy traffic on the access roads, the exchange should not be in a residential neighbourhood or a neighbourhood which, within the coming decade or so, is likely to become residential. It should be as close as possible to the normal flow of products, so that extra transport costs are minimized; a location close to major existing warehouses would probably help to attain this objective. If a substantial part of the goods to be traded is imported or destined for export, a location close to a port should be considered.

89. Eventually, once an auction-type exchange start to trade in warehouse receipts, it is no longer necessary to have warehouses nearby. It then becomes interesting to move to a location which would help to attract new users - normally the town's financial centre. This is also the best location for an open-outcry futures exchange. Sufficient office space needs to be available for members. If the exchange is a fully electronic one, the location of the exchange or its users is irrelevant, as long as good telecommunication systems are available.

90. Exchange buildings should be functional: they should allow trade to take place without undue problems or interruptions, and the different organizational parts of the exchange should be so located that information and paper (e.g. grading certificates, trading slips) can move fast. The trading hall, in the case of auctions or open-outcry trade, should have good acoustics, without echoes, and little noise penetrating from the outside. Access should be controlled, with separate entrances for those who will trade on the exchange and for exchange staff - both groups should wear badges - and a guard to check access; for onlookers, there should be a separate visitors' gallery. Market news, in electronic form or as copies of faxes, should be displayed in

Box 6

ORGANIZATIONAL ELEMENTS OF A SUCCESSFUL COMMODITY EXCHANGE

To go from a simple auction to an exchange where paper contracts are traded on an open-outcry floor is a bit like a puzzle - none of the pieces is by itself really that complex, but they all need to be brought together in order to create a good end-result.

Proper physical facilities

- The lay-out of the trading room is important: for example, the central trading floor should be surrounded by desks or "pigeon-hole" offices where people can have their telephones and do their paperwork.

- There need to be many telephones. A commodity exchange is an ideal forum for trade and for price information. As long as people are aware of this, they will want to use the exchange without necessarily having to be there; and so it should be made easy for them to contact the exchange and its brokers and traders.

- Proper weighing and quality control equipment needs to be available. The products offered need to have a certain minimum standard known to everyone. When delivery takes place, the quantity needs to be checked, and if the buyer thinks the quality does not meet the required minimum standards, there has to be a procedure to determine whether he is right: normally, a small committee (elected by exchange users) then determines at what discount the seller will be paid.

- There needs to be a system to record prices. This can be very simple - a blackboard, and an exchange official who records continuously the latest prices at which trade took place. It is worth while to publicize these prices - printed in the local newspaper or broadcast on the local radio station.

Exchange organization/rules

- Sellers and buyers have to feel safe even when trading with persons unknown to them. To ensure this, the exchange needs to have an *entry mechanism* to determine who will be allowed to trade on it:

  - there should be some formal criteria for access, although they could be quite loose;

  - those trading on the exchange should be financially sound, and deposit some guarantee funds.

- To ensure that there is sufficient volume at any given moment (and thus ensure that there is always a competitive market), it is best to concentrate trade (at least in the beginning) during a few hours; this can be the same time as most physical trade takes place (i.e. in the morning). If several commodities are traded on the same exchange, trade can be either in parallel on different parts of the trading floor (e.g. the corners) or in sessions (e.g. 8.00 to 8.10 - maize; 8.15 to 8.25 - bananas ....; 9.00 to 9.10 - maize .... etc.).

Trading rules

There need to be clear rules for trading on the exchange, basically to improve efficiency:

- bids and offers should be for a fixed quantity of product, of a known minimum quality (e.g. "I sell 5 at 30" - and everybody knows this means five 10-tonne lots of maize are sold at $1.30 a kilo). This is to ensure that bids and orders are clearly understandable, and trade can take place fast and efficiently;

- the best bid/offer should be automatically accepted;

- both buyer and seller have to register their deal immediately, on a standard form.

Box 6 (Continued)

Contract formulation

Trade needs to be in a standardized product; if this is impossible, a simple auction-type exchange should be chosen. The following have to be determined:

- what will be the minimum quality that is acceptable;
- preferably, discounts that will apply if the quality is lower, and premiums for higher quality;
- the traded quantity;
- delivery conditions (at a location of the seller's or buyer's choice; within what period of time?);
- procedures to be followed in the case of dispute.

Training and education

The exchange not only needs to have an active public relations programme, but also should organize training programmes for various groups of users.

this gallery or its access ways, and visitors should be able to follow price developments on the floor. The control of access ensures that everyone present on the floor, apart from the exchange staff, is a legitimate buyer or seller, which greatly facilitates trade. Information and communication are important on an exchange floor. Information screens, giving the latest information on exchange prices as well as (if relevant) outside market information, should be clearly visible. On an exchange which trades paper one can expect a division of work between telephone clerks, who take orders over the telephone, and floor brokers, who actually execute the orders on the floor. To facilitate this, there need to be good lines of view between the brokers' offices and the trading floor (it generally helps if the trading floor is a little lower; brokers' offices could even be spread over two floors surrounding an open trading floor).

91. The layout of the premises should allow not only fast execution of transactions, but also fast registration. This means that the back-office of the exchange should be directly adjacent to the trading floor - a window could divide the two, and floor traders could deposit a copy of their trading slip immediately a trade has taken place. These slips can be processed at once, and within less than a minute the transaction price could be displayed on the floor's noticeboard(s).

92. In terms of hardware, the exchange, irrespective of its type, needs a good telephone system (with sufficient room for expansion); reliable electricity supply (including for the air-conditioning of the laboratory); a number of electronic noticeboards; and a well-connected computer network, with proper back-up systems (it is possible to do with less, e.g. a blackboard instead of electronic screens, but this will limit potential exchange turnover). An auction-type exchange needs to have the requisite number of weighbridges for processing all incoming trade, as well as a grading laboratory. To familiarize producers and others with the grading criteria

used, samples of different grades should be on public display. Having a grading laboratory (or at least access to one) remains important even for a futures exchange, as it will be needed in case of quality disputes.

B. Floor procedures

93. Floor procedures should ensure that liquidity on the exchange is maximized, that there is little room for errors, and that the scope for abuse is limited. Liquidity indicates the capacity to find rapidly and at a fair price a buyer or seller; as long as there is limited volume, it is preferable to concentrate trade within a short period, e.g. a trading session of half an hour to two hours a day, or two 15-minute or two half-hour trading sessions. Two trading sessions a day may be useful if in between the two, new relevant market information becomes available, because of, for example, the opening of an important foreign market. A bell should indicate the end of the trading session, and no trade should be allowed outside these trading times; those who break this rule should be disciplined.

94. For transactions on the floor, standard forms need to be used. They need to be consecutively numbered, and each should have a number of copies, including one for the back-office (which, immediately after the trade has taken place and after the form has been time-stamped, should be deposited in an out-tray from which they will be taken for back-office processing). The time-stamp is important: each form should identify at exactly what time (in seconds) the trade took place, this being an essential piece of information for identifying potential abuses.

C. Maximizing information flows

95. Exchanges draw much of their strength from their price-gathering and distributing role. They should capitalize on this, by gathering and publicly displaying (physically on the exchange premises, and through electronic networks) all relevant market information. This does not need to be a high-cost activity: faxes showing prices of other markets, and other market information, can be copied and put on a noticeboard.

96. It would be very useful if the exchange had access to the information provided by one of the main information vendors (e.g. Reuters, KnightRidder, Bloomberg or Telerate), and if at least one terminal was made publicly accessible at the exchange. The exchange could publish, for members and/or subscribers, a daily fax sheet, or a weekly or monthly periodical, analysing broad market developments. Also, it should provide up-to-date price information to all those who request it, and someone needs to be assigned to respond to telephone inquiries. Exchange prices should be distributed through newspapers, and if possible, through radio and/or teletext, broadcast at standard times and in a standard form. It is often possible to enter into an information exchange agreement with one of the main information vendors, giving the exchange free or very low-cost access to worldwide market news in exchange for the regular inputting of price data. If several exchanges are active in a country, their price information could be loaded into a server, from which they could be downloaded electronically by all those interested.

97. Many of the requests for information will go to brokers and others present on the exchange floor, who therefore also need to be easily accessible; tens of thousands of telephone calls a day are not exceptional even for small developing-country exchanges. An exchange needs many telephone lines - dozens at least, if not over a hundred.

98. Information is most useful if it is well organized. If an exchange trades various grades of commodities, prices need to be quoted by grade (and by delivery location and time). Graphics should be used to make price developments easily understandable, showing for example the development of prices, daily and/or hourly highs and lows, or price relations between various grades, delivery locations or delivery periods. Past price information should be available to (prospective) users of the exchange, free of charge or at a reasonable cost.

99. The exchange should facilitate the use of its price information by undertaking research, and publishing it. This could be, for example, on the seasonality of price movements, on price differentials or on the applicability of various technical analysis systems to the market. Volume developments should also be analysed.

D. Contract specifications

100. As noted before, some form of contract standardization is essential for making a market efficient. The standard contract traded on the exchange normally defines a number of criteria for the commodity and its trade, including the trading unit (the physical volume of the contract, e.g. 10 tonnes); the trading hours; the months that are traded for a futures contract; the price quotations (e.g. United States Dollars a tonne, or cents per pound); the minimum price fluctuation (e.g. 0.1 cents per pound); and deliverable qualities, delivery locations and delivery methods. The next two sections will focus in some detail on two particularly important areas of contract design, namely quality standards and delivery locations/methods. This is not to imply that other aspects of contract design are not important; for example, the price quotations should be acceptable to the industry (if producers, processors and traders quote in full cents, the exchange should not be quoting in half cents); and the contract size should be convenient for those using the market for risk management purposes, while not too large for speculators.

1. Quality standards

101. Futures exchanges need to trade standardized contracts, which implies some standardization of grades. How a proper system for securing quality standards can be set up is discussed in box 7. Even exchanges trading physical commodities can benefit from standardizing the contracts traded. The first step could be to trade specific grades together, in specific time slots (e.g. grade A during the ten first minutes of the hour, then ten minutes for grade B, etc., to be repeated one hour later). This improves market liquidity, and the transparency of the price formation process (and thus trust in the exchange, and its usefulness as a price reference centre).

102. In a futures market, a range of qualities can be made deliverable. A practical problem is then to determine the premiums or discounts applicable to each grade. Different systems are in use. In the case of metals, there are no premiums or discounts; instead, a highly active over-the-counter trade in warehouse receipts ensures that, in most cases, only the lowest-quality metals

Box 7

SETTING UP A PROPER SYSTEM FOR SECURING QUALITY STANDARDS

Exchanges often start with trade on the basis of sample. The first step in its further development will be to move to trade on the basis of description. Whether an exchange will be able to trade on the basis of description depends on:

- the availability of proper grading equipment, and skilled operators;
- the general acceptance of a qualification system;
- the trust of users in quality certificates; and
- the presence of a good arbitration system in case of disputes.

The availability of proper grading equipment, and skilled operators

The right grading equipment, with a sufficient capacity to grade expected turnover during the peak trading season, is essential. Like the exchange, each major warehouse should have its own grading facilities. Skilled operators are also very important: test results can vary greatly if the tests have been done by someone without the required skills.

The general acceptance of a qualification system

Governments often impose grading standards that are not suitable for commercial needs. Also, for export crops, grading standards need to conform to international ones. If there is no uniform grading system that is acceptable to everyone concerned, consideration may be given to creating one, which is probably best done through setting up a committee with private sector representatives.

Which standard descriptions and testing procedures are ultimately accepted should not be up to the exchange - it should be up to the users. Foreign standards can be a useful guideline, but should be decisive only in the case of export commodities - otherwise, one should conform to local standards. Normally, it should be possible to arrive at a list of different grades, and at the quantifiable criteria for each grade (it should be verified whether the grading services which are available can indeed measure these criteria). This list should be approved by the key players in the market, and, if relevant, endorsed by the responsible government agency.

The trust of users in quality certificates

It is difficult for traders and processors used to inspecting each lot themselves to start buying on description - some time for adaptation is needed. Probably the easiest way to establish the necessary trust in the grading system is to mix, for some time, physical samples with quality certificates. That is, the buyer would be able to ascertain that the quality certificate indeed corresponds to the physical product. After some time (probably a matter of only a few months) people would start bidding by telephone (the exchange would need to create the conditions for this). When the exchange thinks that sufficient trust has been developed, it can drop the use of samples.

The exchange can help the process along by publishing real-time (e.g. on a bulletin board) the prices offered for certain qualities, and by appointing a telephone clerk to respond to outside inquiries about current price levels (one can also make this information available through a server, giving those with a modem access to on-line prices). One should stimulate the emergence of "brokers", people who can take outside orders from others not present on the exchange.

The presence of a good arbitration system in case of disputes

A system under which the exchange takes samples is inefficient: it is better to rely on those delivering the commodities to provide their own samples. For this to work, people would need to learn that if they deliver a sample for testing which is not representative of their lot, they are punished. There must therefore be a fast, effective procedure for arbitration in this type of case. The exchange will need to devise arbitration rules, an equitable system for the selection of arbitrators, and a system of fines.

which are deliverable are indeed delivered. A similar system is used for some soft commodities, e.g. robusta coffee and raw sugar. In the case of other contracts, e.g. arabica coffee on the New York Coffee, Sugar & Cocoa Exchange, there is a fixed system of discounts or premiums; for example, Colombian coffee, if delivered, is paid at a premium of 2 cents a pound, while Ethiopian arabica receives a discount of 6 cents a pound. In the case of cotton on the New York Commodity Exchange, premiums and discounts over the standard grade vary according to market prices (or rather, the market prices of six business days prior to the day of delivery). It should be noted, however, that this system of varying premiums and discounts in accordance with market prices is only possible because of the presence of the completely neutral United States Department of Agriculture. Developing-country commodity exchanges should normally not adopt such a system, but rather fix price differentials for the full contract period; doing otherwise would amount to changing the rules of the game when the game is already under way.

2. Delivery locations and procedures

103. An exchange trading spot does not need to allow only its own location as the delivery location. With the use of samples, a whole range of other delivery possibilities exist: from or at a warehouse; from the seller's premises; at the buyer's premises; or at a freight yard. However, providing a wider choice of delivery locations and procedures does not necessarily make use of the exchange easier. The choice of delivery location is normally made by either the company making delivery or the company taking delivery: the exchange should stipulate which of these two options it prefers. It can then determine a system of premiums or discounts to ensure that the delivery location does not just suit one of the two parties; for example, it can allow for transport costs to be added if delivery is at the buyer's premises. Nevertheless, the more delivery locations there are, the greater the risk that one or more of the choices that the buyer or seller can make will be very inconvenient for the other party.

104. For a futures exchange, in terms of number of delivery locations, a balance needs to be struck between making the delivery process practical and reducing the scope for manipulation. If there are many delivery locations, the physical supply of goods that can actually be delivered against the contract is so large that market manipulation is nearly impossible. But at the same time, those taking delivery may have to incur high costs to take delivery from a location which is inconvenient for them. If warehouses are inconveniently located or public warehouses are scarce, one may opt instead for "pipeline"-type delivery; that is, delivery is through adding to or tapping into an existing flow of products (for example, if one is assigned a delivery of crude oil on the New York Mercantile Exchange, this is not for a specific cargo of oil, but gives the right to tap a certain amount of oil at one of the public oil pipelines). Another alternative is to opt for cash settlement: at the end of the contract period, positions are closed out through financial settlement on the basis of the prices prevailing during a certain period just before and/or after the final day in one or more key physical trade centres. The problem is, however, that in many cases reliable physical trade prices are not available, and there is scope for manipulation of these prices.

105. If delivery is to be at and from warehouses, sufficient public warehousing space needs to be available. Warehouses do not need to be owned or managed by the exchange (in effect, warehouse management is not part of the core competences of an commodity exchange, and so

even if an exchange becomes involved in this in order to meet an immediate need, it would be better to spin off this activity as soon as possible). It is best if the warehouses are owned by professional warehousing companies, for when banks operate warehouses, they are often quite hesitant about allowing the warehouse receipts they issue to be traded. The exchange should specifically authorize warehouses as places where delivery can take place (on the basis of the quality of the warehouse's management, its technical facilities, its daily capacity to make or take delivery, etc.), and sign agreements with them specifying the conditions of their use, including maximum rates. The warehousing capacity that is available to the public should be many times greater than the maximum speculative limit established by the exchange.

106. The delivery process can be arranged in different ways. The most practical would seem to be to assign delivery notices on a first-in, first-out basis: once the exchange receives the notice of delivery by a seller, it immediately assigns it to the buyer who holds the position which has been open longest.

107. Delivery mechanisms need to be practical for hedgers; in particular, it should be possible for them to take delivery of a grade of a commodity that they can use, at a convenient place. Two mechanisms are useful in this regard: retendering, and Exchange of Futures for Physicals (EFPs).

108. Retendering is the possibility for someone who has been sent a delivery notice by the exchange (that is, a notice saying that he has to take delivery of commodity grade X at location Y) to sell a futures contract, and immediately deliver this delivery notice against the contract. For example, imagine a two-week delivery period. At the beginning of the period, the exchange receives notice from a seller of a futures contract that he will be closing out his position by making delivery of grade X at location Y. The exchange identifies the holder of the long position that has been open the longest, and notifies him the next day that his position is being closed out, and that he has to take delivery of grade X at location Y, paying a certain sum (so far, only margins have been paid). This long-position holder has problems either with the specific grade or with the location, immediately sells a futures contract, and notifies the exchange that he is retendering the delivery notice; he will thus be charged only the storage costs at location Y for one day. The exchange then notifies the holder of the position which has then been open the longest, and so on. Only those sent delivery notices at the end of the delivery period will not have the opportunity to retender them.

109. An EFP is an agreement between a buyer and a seller of commodities to swap both physical positions and futures positions. Physical delivery then effectively takes place at the convenience of the two parties. EFPs not only facilitate the use of the exchange by hedgers, but also make market manipulation very difficult (because they expand the part of supply which can be used to close out positions), and indeed are likely to attract extra business to the exchange. To give one example of the use of EFPs:

- A seller sees a favourable price on the exchange for his commodities. He thus sells a certain number of contracts on the exchange to fix the price.

- Later, he finds a buyer for the physical commodities. Rather than agreeing on a certain price, they agree to enter into an EFP; that is, the long position of the seller is transferred to the buyer. The seller thus has effectively received the price which prevailed at the time he sold the futures contracts. Physical delivery takes place at the convenience of buyer and seller.

- The buyer waits until exchange prices are at a sufficiently attractive (low) level to close out his futures position; he will thus effectively have paid the price prevailing at that time for the commodities.

E. The contract launch

110. In the case of paper trade, the contract launch is an important moment. For an auction-type exchange, using the exchange just means a re-routing of physical trade flows, while in the case of paper trade, potential users would have to initiate a completely new type of activity - a much less predictable change. Many potential users will be watching the initial days of trading of a contract with great interest. If the contract fails to show much promise, they may decide it is not worthy of further interest, but if it goes well, they are likely to test the waters themselves. Although this may not do much as regards the total volume (as most companies are likely to use the market only for a very small part of their total needs, until they have built up the internal capacity to use it to a greater extent), a fairly large and representative participation in an exchange ensures its future growth potential.

111. Thus, it is important for an exchange to line up as many users as possible for the opening days. Just asking companies whether they will use the market is not good enough: experience shows that only a tenth or less of turnover predicted on the basis of their responses actually materializes. A real commitment is needed, and this will require careful orchestration by the exchange's management. Timing is important here: experience, once again, shows that the best moment to launch a contract is when prices are volatile, but in an upward trend (making buyers nervous about future price increases, and sellers afraid of missing the currently high price levels). At the same time, there should be no imminent threat of major changes in government policies, since this would make potential participants afraid to use the market.

112. When the contract is launched, it should be as close as possible to perfection. There is no place, for example, for faulty delivery procedures: it is almost certain that some of the market participants will make or take delivery just to test whether the mechanism works properly. All systems, from actual trade to clearing and price reporting, should have been checked in order to minimize the chance of a systems breakdown. An exchange only has one chance to get it right - if its initial effort proves to be a failure, it may be many years before it can try again.

CONCLUSIONS

113. Starting an exchange as a place where physical products are collected and then auctioned off among the buyers present would seem a relatively easy matter - as long as this is indeed a service that is needed. However, as has been argued in this paper, few exchanges can afford to remain in this purely physical type of business, and most will have to look for more advanced ways of serving their clients, in line with the development of their economies. In doing so, whether they trade warehouse receipts, forwards, futures, or options, they will be confronted with a wide array of possible problems: none of these is insurmountable, but all need to be addressed in order to increase the likelihood of the exchange's (continuing) success.

114. Before anything else, exchanges should be safe places to do business. This means that they need to be properly capitalized, and properly managed. The financial services that exchanges can provide, be it in guaranteeing the performance of forward or futures contracts or in making advance payments to sellers, are important, and they would thus benefit from close cooperation with the financial sector. Finance is important anyway, as exchanges need to plan not only for the immediate investment costs, but also for the costs of running the exchange for at least two years.

115. Exchanges need to be well regulated, which is only possible within the framework of sound government regulations. They need to have a good self-regulatory system, and this self-regulatory responsibility should also apply to their intermediaries. Regulation needs to be seen as tough, fair, and uncompromising. And especially in developing countries, exchanges need to make an effort to minimize the potential abuse of their market-place.

116. Success often relies on getting the little details right. Exchanges normally have only one chance to launch a contract - if it goes wrong, prospective users are likely to be alienated for years. It is important that, in addition to its providing suitable facilities and procedures, the contract traded is indeed what users will need- and this is something that can be ensured only through close discussions with prospective users.

117. There are definitely opportunities for new exchanges. With the liberalization of domestic and export trade, and the withdrawal of the government from marketing and pricing functions, a whole new category of involuntary risk takers has emerged in many countries. This is the natural public for an exchange, which provides ways of managing these risks: facilitating the discovery of counterparties and managing counterparty risk; reducing credit risk; improving contract security, and for the more advanced forms of exchanges, managing price risk. But to go from opportunities to success is not easy, and exchanges should have a realistic view of what they can do and what needs to be done.

Annex

CONDITIONS FOR THE TRADE IN WAREHOUSE RECEIPTS

A. General conditions

The use of warehouse receipts has many attractive features for those active in the production, processing and trading of commodities, and for their financiers. Under this system, against deposit of commodities in a warehouse, the warehouse operator issues warehouse receipts in one form or another (depending on a country's legal and regulatory system). The warehouseman becomes legally liable for the goods he stores. If these goods are stolen, damaged or destroyed through any fault of his, he and his insurance companies have to make up for the value lost (additional insurance can be obtained for catastrophic events). The integrity of this warehouse operator is secured by government licensing and controls, and by outside guarantees which the warehouseman has obtained from bonding companies (subsidiaries of banks which provide against defaults) and insurance companies.

The existence of warehouse receipts does not mean yet that they can be traded. For this, additional conditions need to be met. The first condition is that warehouse receipts are negotiable- that is, made out to the order of a named person or to bearer, and transferable (endorsable) to others. When the bearer of a properly endorsed receipt surrenders it to the warehouseman, he receives delivery of goods stored against this negotiable receipt. But making warehouse receipts negotiable is not enough to create a secondary market. Potential buyers also need to have trust in the system. This implies that:

(a) Warehouse operators permitted to issue negotiable warehouse receipts should be specifically licensed by the government to do so, and their functioning should be checked regularly.

(b) There has to be a tracking system for the warehouse receipts, to ensure that at each moment, only one party has legal title to the commodities held as collateral. One possibility would be for the warehouse operator to register every change of ownership of the warehouse receipt; when the system is more developed, a central registry (preferably in a government department) probably becomes more efficient.

(c) Warehouse receipts have to confer clear and unequivocal rights on the entities holding them. It is probably best if the various warehouse operators in a country agree to one common document or, if they fail to do so, that the government prescribes standard documentation (in countries where warehouse receipts are used, governments normally prescribe the minimum contents of these receipts).

(d) The country's legal system needs to be appropriate for this type of financial transaction. For example, if the warehouse goes bankrupt, the owner of the receipt has to be able to lay immediate claim to the commodity. In this respect as well as in others, local laws and regulations should not remain a dead letter, but need to be enforced by the government and by courts of law.

(e) The system needs to be sufficiently flexible to allow normal functioning of the cash markets, with the original borrower using the commodities, for example for exports, thus reimbursing his loan.

Although, if warehouse receipts are traded among banks, the bank initially receiving the receipt normally guarantees it, this is not a condition that needs to be met for trading warehouse receipts at an exchange.

B. Warehouse ownership and management

The warehouse company puts its credit in the place of that of the original seller; thus an improvement in credit will result only if the credit of the warehouse is better than that of the seller. This will be the case only if the warehouse company is independent of the seller, and is well managed and properly secured. This means that only public warehouses (terminal warehouses[a] or field warehouses[b]) can provide warehouse receipts of use to international trade; with private warehouses, there is no checking whether the commodities against which the receipts are issued are indeed in the warehouse, and whether they have not been used several times as collateral.

The quality of a public warehouse is determined by its management, reputation, methods of operation and financial strength. It should be secure against theft, fire and adverse climatic conditions. Physical characteristics - the roof, walls etc.- are important considerations, with the exact requirements varying from commodity to commodity. Also, warehouses should normally be close to a major quay, waterway or occasionally a railroad terminal, unless the product stored is a high-value one. The person who owns and operates the warehouse must be trustworthy, in other words unlikely to sell the commodity stored and disappear with the money. Unfortunately, it should be noted that some public warehouses are hardly suited for the issuing of warehouse receipts, because of weaknesses in management or inadequate acceptance of the needs of international collateral management (e.g. independent inspections, provision of guarantees). Furthermore, in some countries terminal warehouses are operated by banks, which use them only to store commodities pledged as collateral for the loans they themselves arranged; this may hinder the development of the trade in warehouse receipts.

C. Insurance

Not only does the warehouseman need to take out insurance to protect himself against theft and other operational problems, but also the collateral needs to be protected against both the risk of disaster (drought, flooding, sabotage) and political risk. It is important, for both the depositor and the financing bank, that the warehouse company has adequate insurance. The

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[a] A terminal warehouse is usually a large storage area, e.g. located in a port, that serves many businesses and is owned and operated by an independent warehouse company.

[b] A field warehouse belongs to the firm which wants to obtain credit, but in order to obtain credit, an arrangement is made whereby an independent warehouse operator leases (part of) the storage facility for a nominal fee, and becomes responsible for control of the commodities to be used as collateral.

warehouse company or warehouseman is unlikely to be financially strong enough to make up for any losses for which either is to blame. The depositor cannot afford any loss, regardless of whose fault it is. Insurance must therefore be arranged by both the warehouse company and the depositor. Since the financing institution has a direct stake in the goods stored, it should make sure that proper coverage is maintained and that any insurance proceeds are turned over directly to itself. Should there be any loss of or damage to stored property, and if the insurance coverage is inadequate, a financing institution normally has the possibility of recourse not only to the warehouse company (within its legal liabilities), but also to the borrower, for the full amount of the loan plus interest.

D. Other legal and regulatory requirements

Legally, it has to be possible to "mortgage" warehouse receipts, that is, they should be considered as documents of title. They are such documents only when, by law or by long-standing business custom, the receipt is recognized as sufficient evidence that the person to whom it is issued has title to the property described. In some countries, the law explicitly recognizes warehouse receipts as documents of title, but in others, they may be legally considered only as evidence of possession by the warehouse operator on behalf of the depositor.

If warehouse receipts do not convey title, then, evidently, their use for collateral purposes, including as a pledge, is made more complicated (for this reason, it may be preferable for developing countries which wish to improve their financing possibilities to codify the status of warehouse receipts in law, using models from other countries). If they are title documents, their transfer to a bank automatically gives the bank possession of the commodities deposited in the warehouse. If the borrower defaults, the bank can present the documents to the warehouse operator to obtain the commodities, and liquidate them. If they are not title documents, the transfer and registration of the receipt may not give the lender any security: the warehouseman has obligations only to the depositor and not to a purchaser or new possessor of a warehouse receipt, until notice of the transfer has been communicated by the transferor to the warehouse company. The use of warehouse receipts for financing purposes does not become impossible (one can use an arrangement whereby the warehouse operator explicitly acknowledges to the lender that it is holding the commodities on the lender's behalf- this is known as an "attornment" arrangement), but there will be little scope for trade in the receipts.

GLOSSARY

arbitrage The simultaneous sale and purchase of equivalent contracts in different markets (e.g. the sale of a June contract, and the purchase of an October contract), for the purpose of benefiting from a discrepancy in prices.

auction A public sale in which goods are sold to the highest bidder.

backwardation The extent to which forward prices are lower than nearby prices. Also used to refer to a situation in which forward prices are lower than nearby prices.

basis The difference in price between a physical commodity and its corresponding futures quotation. The basis reflects different time periods, product grades and/or locations.

basis risk The unexpected risk (and conversely, profit opportunities) associated with the fluctuations ofthe basis around its "normal" level for a certain grade of a commodity at a certain location, between the time a hedging position is established and the time it is lifted.

bid An offer to buy a commodity (*in casu*, futures contract) at a pre-stated price.

bid-ask spread The difference, at a given moment, between the price offered for the purchase of acontract and the price asked for the sale of a contract.

broker A person or company paid a commission for accepting or executing the buy and sell orders of a customer.

bucket shop An enterprise that presents itself as a broker, but does not execute client orders on the exchange. One of the main forms of customer abuse.

call option A contract giving the right, but not the obligation, to buy a futures contract at a specified price at or before some later date.

cash settlement A method of settling certain futures or options contracts whereby instead of physical delivery, contracts are closed out at a certain **settlement price**.

clearing house An institution which guarantees futures contracts by automatically substituting itself as the seller to any buyer and as the buyer to any seller, for all transactions undertaken on a commodity exchange.

close out To reverse a futures trade (by an opposite transaction), and thus end a long or a short position. Also called **liquidate**.

commission Fee paid to a broker for the execution of an order.

commodity exchange Any organized market-place where there is effective competition among buyers and among sellers; can serve as a forum for the trade in spot commodities, warehouse receipts, forward contracts, or futures and/or options contracts. Generally refers to a futures market.

contango The extent to which forward prices are higher than nearby prices.

counterparty risk The risk that a counterparty will default on an obligation (such as fulfilling obligations under a physical trade contract or an over-the-counter risk management contract).

cross-hedge Hedging a cash market position in a futures contract for a different but price-related commodity.

default Failure to meet an obligation, such as paying margin calls or delivering against a contract.

delivery The process of supplying physical commodities in settlement of an expiring futures position.

delivery month The specified month during which a futures contract matures and can be settled by delivery.

delivery notice A notice that can be presented by the seller of a futures contract to the clearing house once the contract enters its delivery month, and that must be presented before expiry of the contract. This notice is then sent by the clearing house of an exchange to the holder of a futures contract nearing maturity, to inform him that a specific lot of a physical commodity, with a certain grade and to be found in one of the exchange's recognized warehouses, has been assigned to him and that he has to take possession of it within a certain time-frame.

deposit Amount required by a clearing house as security when a position is opened. Also called *initial margin.*

derivatives Contracts whose price depends directly upon the value of one or more underlying contracts, securities, commodities or any other agreed pricing index. Derivatives include both exchange-traded instruments (futures and options) and over-the-counter instruments (swaps, commodity bonds and other "hybrid" instruments).

differential The discount or premium allowed on delivery against a futures contract for grades or locations better or worse than the standard grade or location specified in the futures contract.

electronic market A market forum in which traders buy and sell contracts through a computer network, with the computer system automatically matching bids and offers.

floor broker A person who executes customer orders on the trading floor of an exchange; can in addition trade on his or her own account.

forward months Futures contracts, currently trading, calling for later delivery.

forwards Contracts for the purchase or sale of a commodity for deferred delivery; different from a spot contract only in that delivery is at some time in the future.

futures Contracts to deliver at a future date a standard quantity of a commodity of a standard quality traded on an organized exchange with a limited membership; generally closed out before delivery.

futures market An organized market-place providing the facilities for futures market trade. A futures market can be an **open-outcry** exchange or an **electronic market**.

grading The inspection of physical goods, necessary for ensuring that they are of a tenderable quality for a futures market.

hedge A purchase or sale on a futures market or options market intended to offset a price risk on the physical market.

leg One part of a transaction; for example, a hedge has a futures leg and a physical leg.

life of contract Period between the day a futures contract starts trading, and the day it expires.

liquidation The closing out of a long or short position.

liquidity Indicates the ease with which orders can be executed without undue effects on price levels.

local A small commodity exchange trader taking positions on his or her own account.

long A position with more purchase contracts than sale contracts.

lot The unit of trading on the market.

manipulation The deliberate attempt to move market prices away from their true equilibrium.

margin The security required for a position by a broker or a clearing house. Also called **deposit** or initial margin.

margin call A demand for additional security arising from an adverse price movement. Also called *variation margin.*

market maker In stock exchanges and some electronic commodity exchanges, a professional dealer who has an obligation to buy when there is an excess of sell orders, and to sell when there is an excess of buy orders. On commodity markets, more commonly refers to specialist companies which, using complex computer program, undertake active arbitrage between options and futures markets, and in this way are able to be constantly present on the options market. At times, also used as synonym for *floor trader.*

maturity Period within which a futures contract can be settled by delivery of the underlying commodity.

offer An indication of the willingness to sell at a given price.

open-outcry A method of public auction where participants are together in one place, and make bids and offers through shouting out and through hand signals.

option A contract giving the right, but not the obligation, to buy or sell a futures contract at a specified price at or before some later date. To obtain such a contract, the buyer needs to pay a *premium*; his maximum loss is limited to this premium. The seller of an option receives the premium, but his potential loss is theoretically unlimited. See also **call option** and **put option.**

over-the-counter Refers to a risk management market that is not part of an organized exchange, or to the risk management instruments that are traded on this market.

physicals The underlying commodities on which a futures contract is based.

position limit The maximum position, long or short, in one commodity futures contract, or in all contract months combined, that any one company is allowed to hold either directly or indirectly.

price discovery The process of determining the price of a commodity, based on supply and demand factors.

put option A contract giving the right, but not the obligation, to sell a futures contract at a specified price at or before some later date.

recognized warehouse A warehouse recognized by a commodity exchange as acceptable for delivery of commodities against futures contracts. Such a warehouse needs to fulfil certain necessary requirements in terms of supporting infrastructure (including transport and loading infrastructure), storage facilities, capacity and location. Also called *exchange warehouse* or *licensed warehouse*.

retender The process which allows a holder of a futures contract who has received a delivery notice through the clearing house to sell a futures contract to close out his position, rather than having to take physical delivery.

ring A circular area on the trading floor of an exchange where traders and brokers stand while executing futures trade. Also called *pit*.

roll-over A trading procedure involving the shift of a position in one contract month to a position in a further-away contract month, by closing out the nearby position and simultaneously opening a position in the new contract month. Also called *switch*.

scalper A commodity exchange trader who tries to profit from small but rapid price changes.

settlement price The daily price at which the clearing house clears all trades, used to determine margin calls. Also refers to a price established by an exchange for contracts to be closed out through a cash payment, rather than through physical delivery.

short A position with more sales contracts than purchase contracts.

short selling Selling a commodity one does not yet own, in the expectation of acquiring it later. A normal part of commodity trade.

slippage The difference between the price at which the trader/hedger hopes to buy or sell and the price at which the order is actually executed.

speculation The taking of positions on a futures or options market in an attempt to benefit from a correct anticipation of future price movements.

spot contracts Contracts for immediate delivery - that is, within a few days.

tender To make delivery; or to give notice to the clearing house of the intention to initiate delivery of the physical commodity, against an open short position in the futures market.

terminal market Synonym for **futures market**.

volatility A statistical measure of the tendency of a market price to vary over time.

volume The number of contracts traded on a market.